APRIL 11, 1942

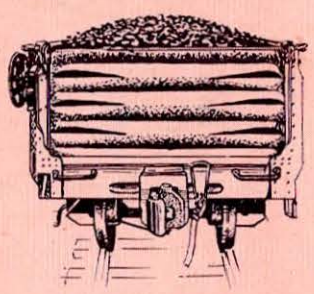
Railway Age

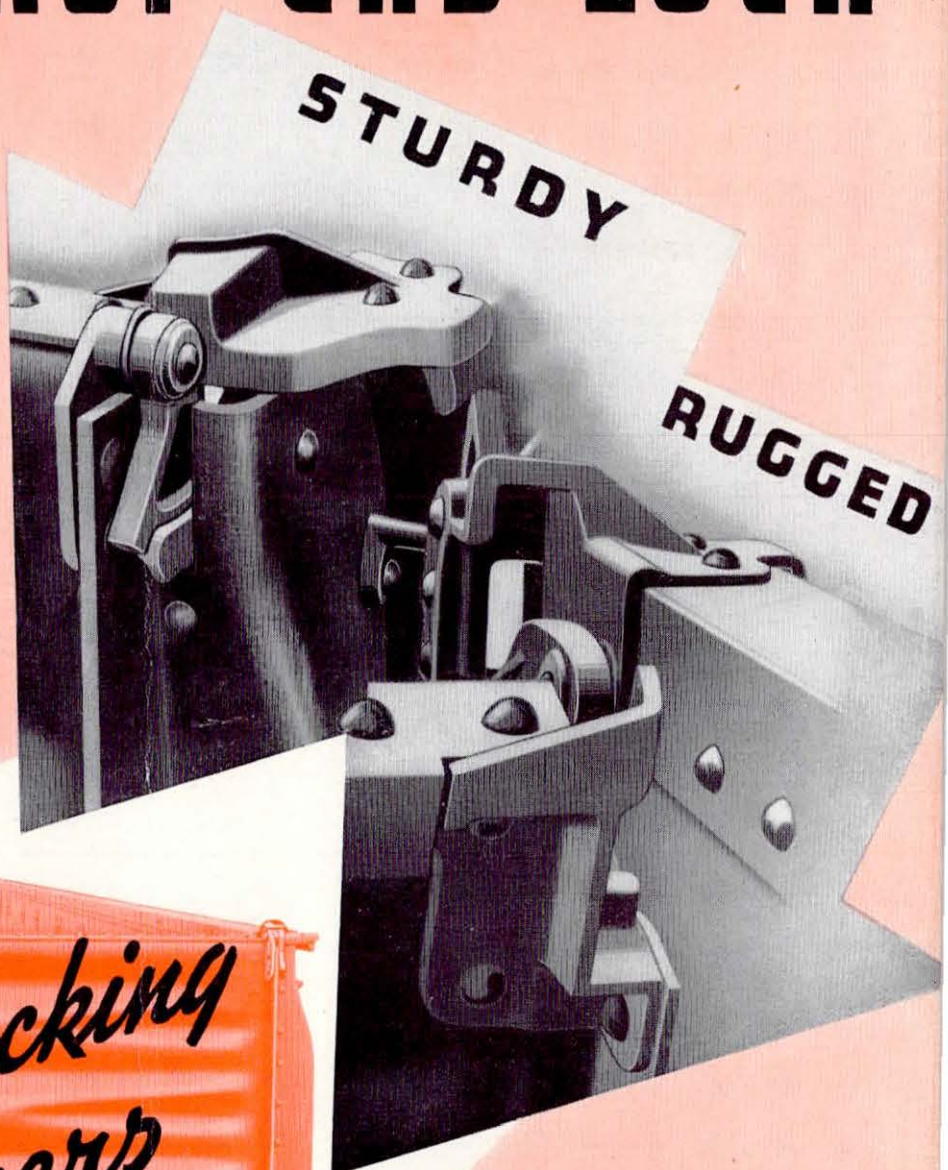
Founded in 1856

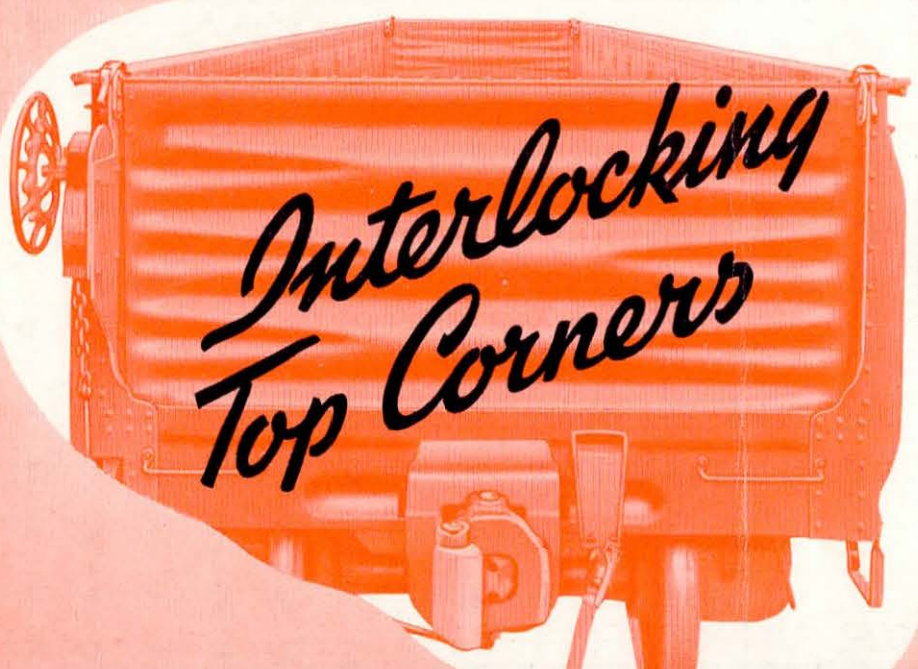
McCARTNEY LIBRARY
GENEVA COLLEGE

WINE DROP END LOCK

for Gondola Cars







Rigid as a Solid End Car

Wine RAILWAY APPLIANCE CO. TOLEDO, OHIO

NO Critically Strategic Metals are Needed TO MAKE CHILLED CAR WHEELS

No stock piles are called on for scarce metals to help make Chilled Wheels.

Only iron is required and much of that is used over and over as the Wheels retired from service are returned to our foundries under the unique exchange plan.

Where a shortage of used wheels exists, the industry is dependent upon pig iron, but under the officially approved plan of the W.P.B., manufacturers are able to continue to make the vitally necessary wheels for railroad service.

Chilled Car Wheels not only save money, but today they save priceless metals for use where they are indispensable in winning the war.

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

230 PARK AVENUE,
NEW YORK, N. Y.

445 N. SACRAMENTO BLVD.,
CHICAGO, ILL.

AMCCW

ORGANIZED TO ACHIEVE:
Uniform Specifications
Uniform Inspection
Uniform Product

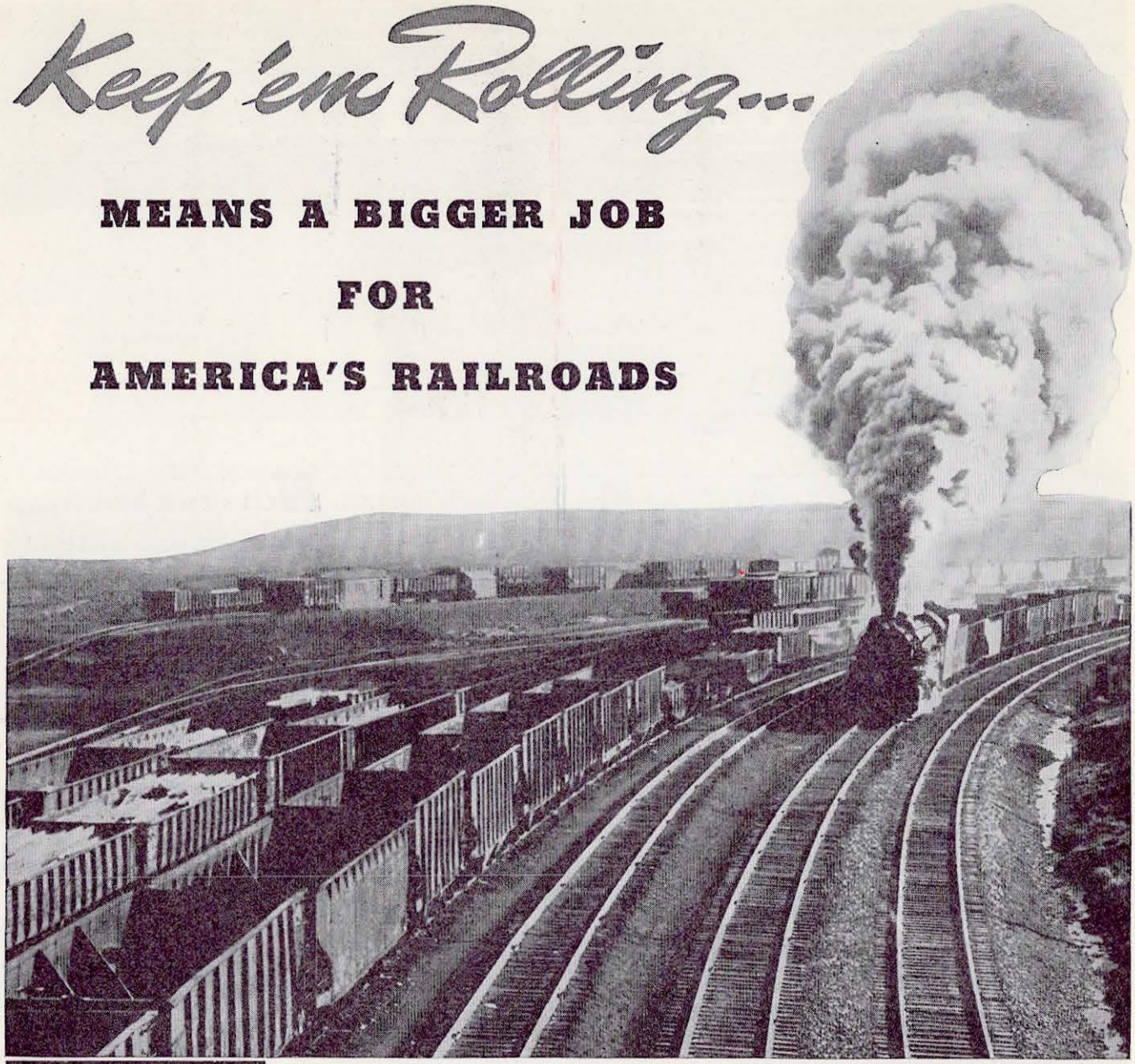
Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 112, No. 15.

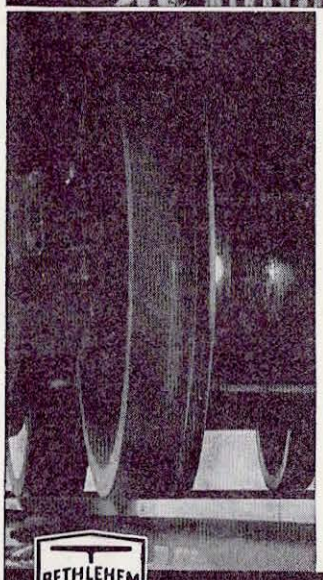
Keep 'em Rolling...

MEANS A BIGGER JOB

FOR

AMERICA'S RAILROADS





America's railroads have a big job ahead. To do their part in helping to carry out the vast arms program for this year—60,000 airplanes, 45,000 tanks, 20,000 anti-aircraft guns, 8,000,000 tons of shipping—the railroads will have to "keep 'em rolling" as never before.

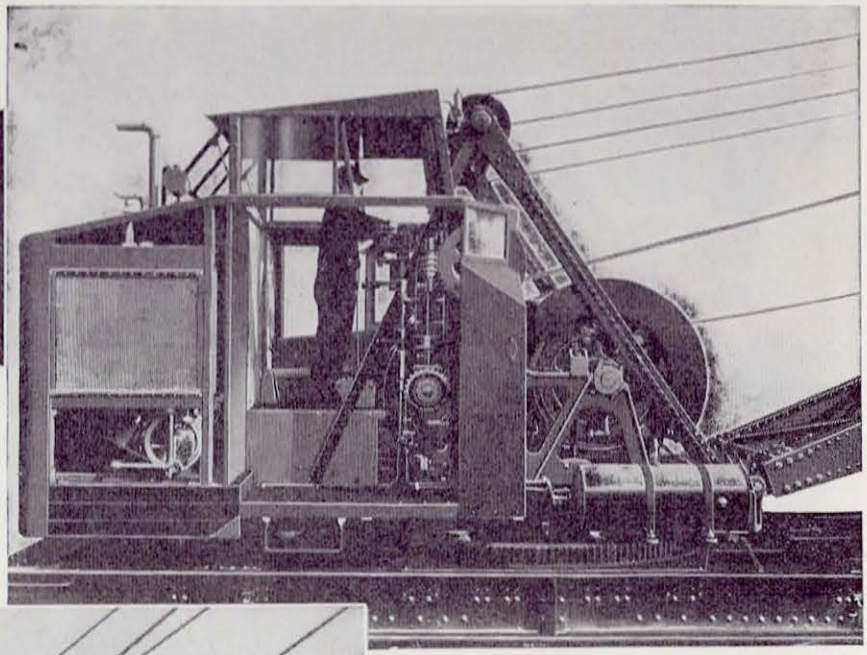
For the extra wear and tear of war traffic, railroads need tough, durable steel products more than ever. And although Bethlehem is currently supplying an immense tonnage of steel for arms manufacture, Bethlehem Wrought-Steel Wheels and Forged Axles, Bethlehem Track Equipment and other steel products will continue to do their part toward meeting the needs of America's railroads.

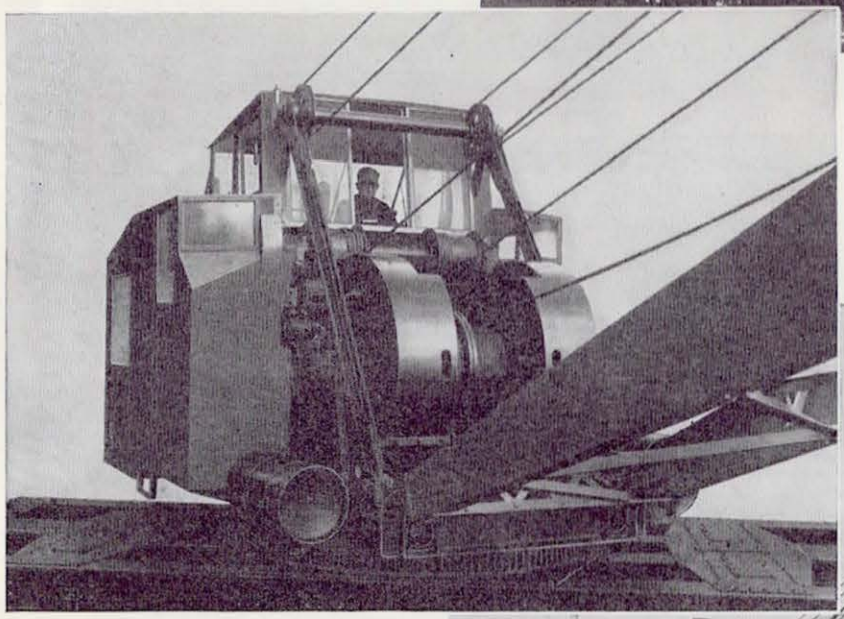
BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY

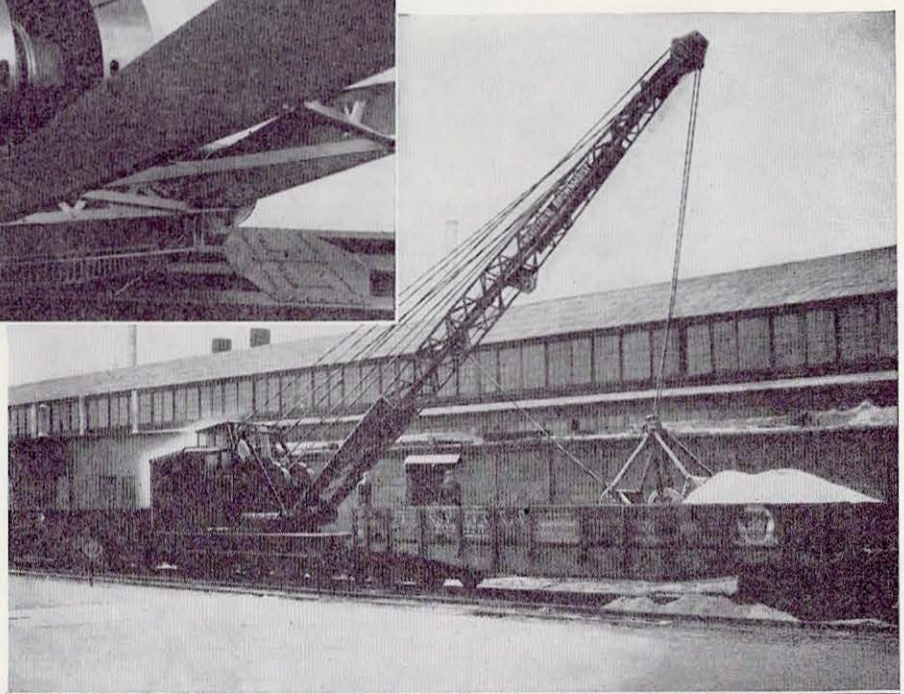
Operators Like the Extra Comfort and Ease of Control of Industrial Brownhoist Cranes

Operators appreciate the monitor-type cab on Industrial Brownhoist gasoline or Diesel cranes (from 10 through 40 ton capacity) for it provides 360° visibility, good ventilation, convenient controls and good insulation against heat and noise.





I. B. Cranes are extra-sturdy from wheels to boom-tip. Their unusually rugged crab mechanism, efficient power plants, and powerful undercarriages, built to the same standards as the heaviest railroad tenders, insure long life and uninterrupted performance.



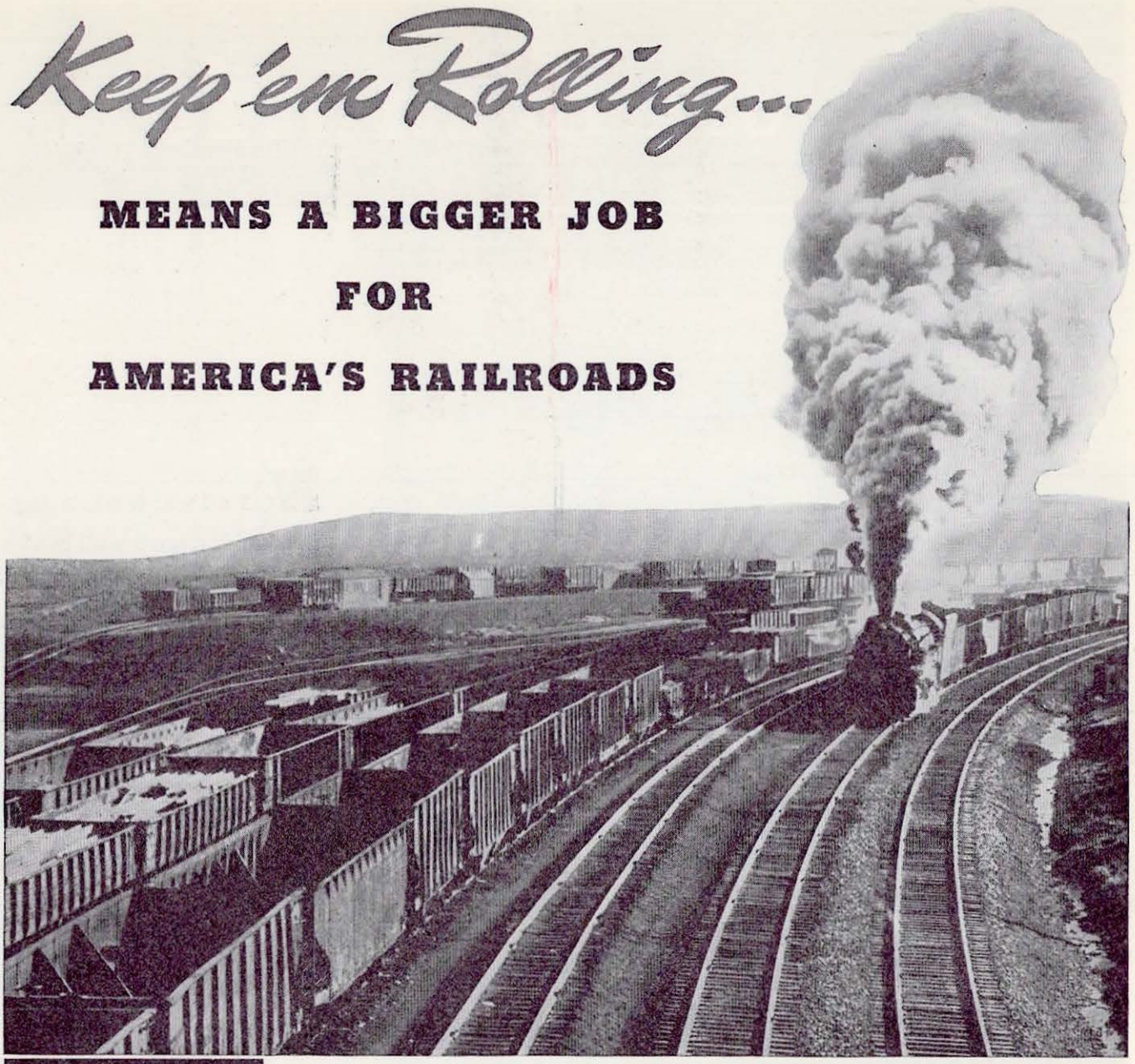
Whether equipped with magnet, hook or bucket, I. B. Cranes do an outstanding, low-cost job of material handling in any plant. If you are interested in speeding up your material-handling, it will pay you to operate an Industrial Brownhoist crane. Write today for complete facts.

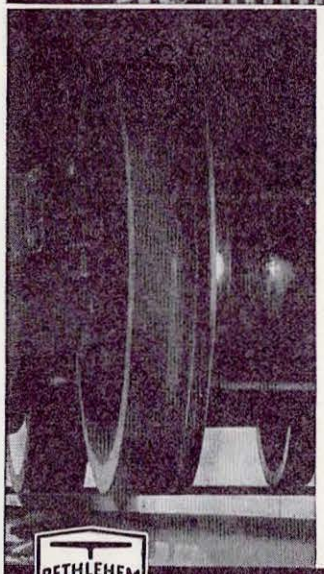
INDUSTRIAL BROWNHOIST BUILDS BETTER CRANES

GENERAL OFFICES: BAY CITY, MICHIGAN • DISTRICT OFFICES: NEW YORK, PHILADELPHIA, PITTSBURGH CLEVELAND, CHICAGO

Keep 'em Rolling...

MEANS A BIGGER JOB FOR AMERICA'S RAILROADS





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BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY

War work in motion

NOT all war work is done in factories, nor are all battles won on the field. Behind our efforts there must be coordinating, planning, and preparing. Here the railroads play a tremendous role.

Exide-Ironclad Batteries, by their ceaseless and dependable flow of current, provide bright lighting and comfortable air-conditioning so that the men the country is depending upon can work at highest efficiency while traveling from place to place. Exide-Ironclads provide unfailing power, to keep war work in motion as America's trains roll on.

Exide
IRONCLAD
BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto

PREVENT SHIFTED LOADS

that delay or damage Wartime Shipments

WITH railroads holding the key position in transporting America's war production, delays and damages from such causes as SHIFTED LOADS must be minimized.

The Improved Style A-6 (S-M) Snubber Spring.

WHAT IS CAUSING THE SHIFTED LOADS ?

- ★ 1—Improper Loading? (doesn't comply with A.A.R. Rules?)
- ★ 2—Longitudinal Shift? (indicates excessive end impact)
- ★ 3—Bracing loose in the Vertical Direction? This last condition indicates:—

EXCESSIVE BOUNCING . . . . VIBRATION

which can be remedied by using

Complete Assembly of Holland Volute Snubber Spring ready to slip into the spring group.

HOLLAND Style A-6 VOLUTE SNUBBERS

"they Have what it takes"

SIMPLY replace one A.A.R. Coil in each spring group with a Holland Volute Snubber. This increases the spring nest shock capacity, in addition to snubbing excessive spring action. This is our contribution to "Better Shipping Month"—and for better shipping throughout the year.

We invite you to use Holland Friction Volute Springs on your trucks subject to unusually severe service.

WRITE FOR BULLETIN GIVING FULL DETAILS

HOLLAND COMPANY

332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

Operators Like the Extra Comfort and Ease of Control of Industrial Brownhoist Cranes

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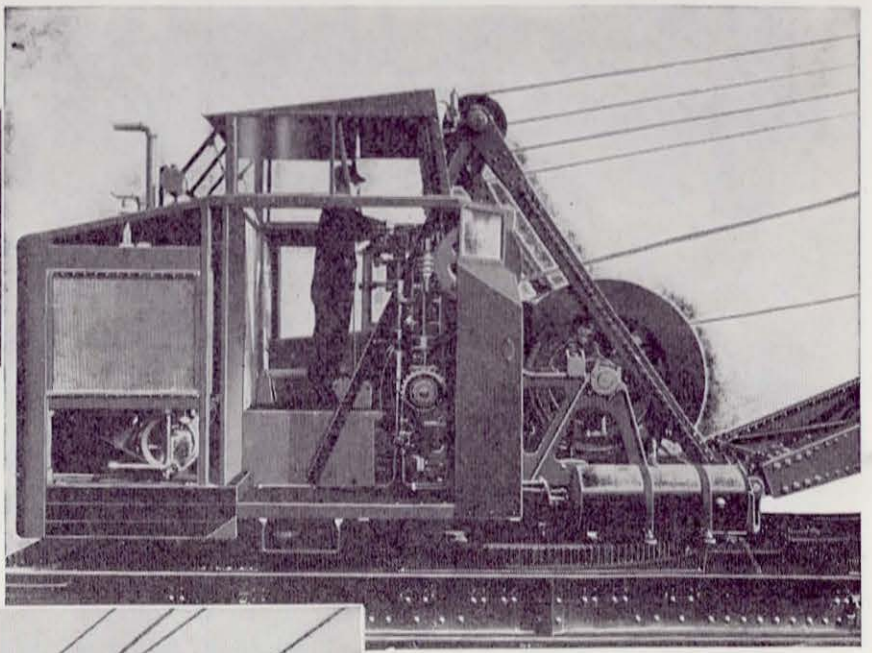

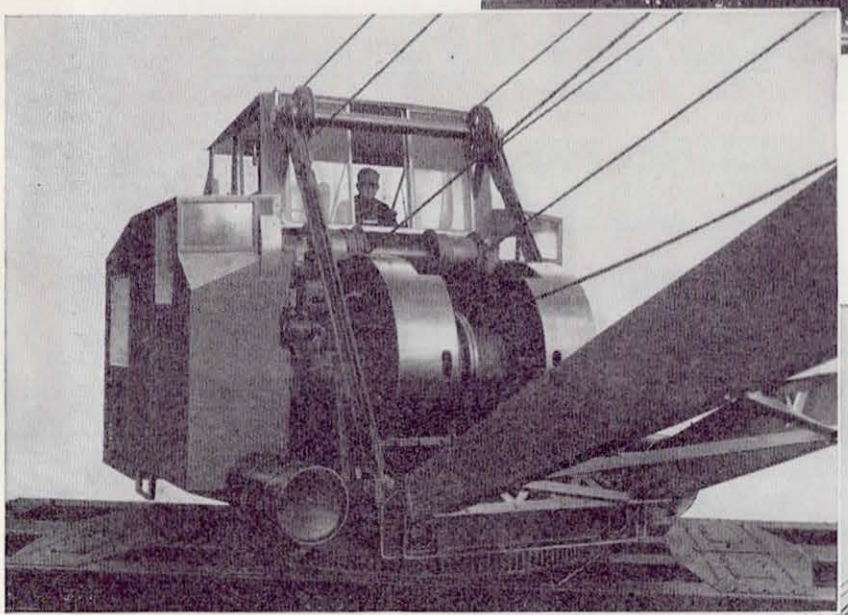

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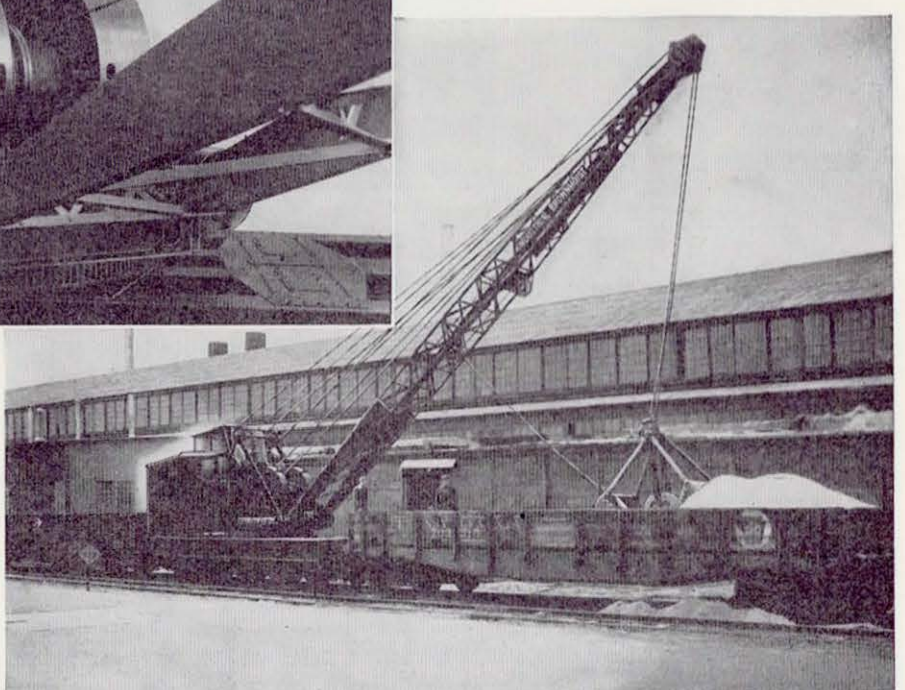

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INDUSTRIAL BROWNHOIST BUILDS BETTER CRANES

GENERAL OFFICES: BAY CITY, MICHIGAN • DISTRICT OFFICES: NEW YORK, PHILADELPHIA, PITTSBURGH CLEVELAND, CHICAGO

FOR LONGER RAIL LIFE

Build Up Rail Ends By The Oxweld Method

• Rail life is greatly prolonged when battered rail ends are rebuilt with oxy-acetylene welding by the Oxweld method.

The special Oxweld welding rods used produce a deposit of metal which has a hardness considerably greater than that of the original rail. For this reason, the Oxweld method not only restores a true rail surface at low cost, but provides a protective armor which effectively retards subsequent batter.

Greatest economies can be effected with this method when rail ends are rebuilt before batter has progressed more than 2 or 3 inches back from the end. By rebuilding at this stage, wear and tear on ties, joint bars, bolts, and equipment—which increases more rapidly as batter continues to develop—is prevented or considerably reduced.

For programs of building up rail ends, Oxweld supplies high quality materials, dependable techniques, and supervision which assure uniformly good results.

THE OXWELD RAILROAD SERVICE COMPANY
Unit of Union Carbide and Carbon Corporation

UCC

Carbide and Carbon Building Chicago and New York

OXWELD RAILROAD SERVICE

SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

The word "Oxweld" is a registered trade-mark of a Unit of Union Carbide and Carbon Corporation.

TO TURN *America's* DOLLARS INTO THE WORLD'S MIGHTIEST ARMAMENT NEEDS CARS THAT ARE BUILT TO KEEP ROLLING

a.c.f. BUILDS 'EM—AND BUILDS 'EM WELL!

The *Arsenal of Democracy* has gone into action with men, machines and materials on the mightiest armament program in history — $56,000,000,000 for vitally needed things of every kind to insure victory for the arms of the United Nations.

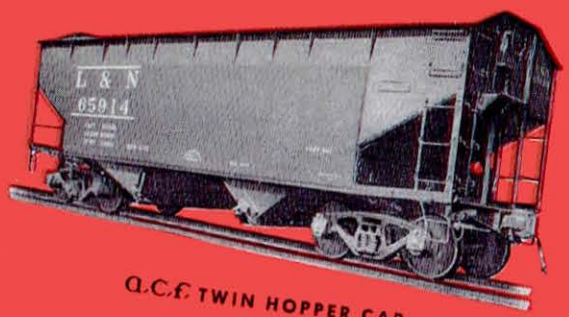
The Railroads of America must keep that production rolling — for only the railroads can move such enormous tonnage swiftly and surely. Thousands upon thousands of freight cars roll up to the nation's factories with the materials for this gigantic program — then haul away huge loads of weapons and munitions.

"In all the world no job is being better done today than by the American railroads" reads the citation.

In step with this unprecedented achievement a.c.f. facilities are geared to continue to put *the utmost in carrying capacity and availability on the rails* into every a.c.f. car that rolls out of our shops — meeting squarely today's heaviest demands for cars and more cars.

a.c.f.

The cars a.c.f. builds are built to keep rolling!



A.C.F. TWIN HOPPER CAR

A.C.F. BOX CAR

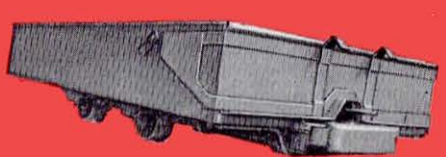
A.C.F. BALLAST CAR

A.C.F. COVERED HOPPER CAR

A.C.F. GONDOLA CAR

A.C.F. TANK CAR

A.C.F. FLAT CAR



A.C.F. MINE CAR

AMERICAN CAR AND FOUNDRY COMPANY

NEW YORK • CHICAGO • ST. LOUIS • CLEVELAND • PHILADELPHIA • PITTSBURGH • ST. PAUL • SAN FRANCISCO

On 25 more NEW YORK CENTRAL ENGINES!

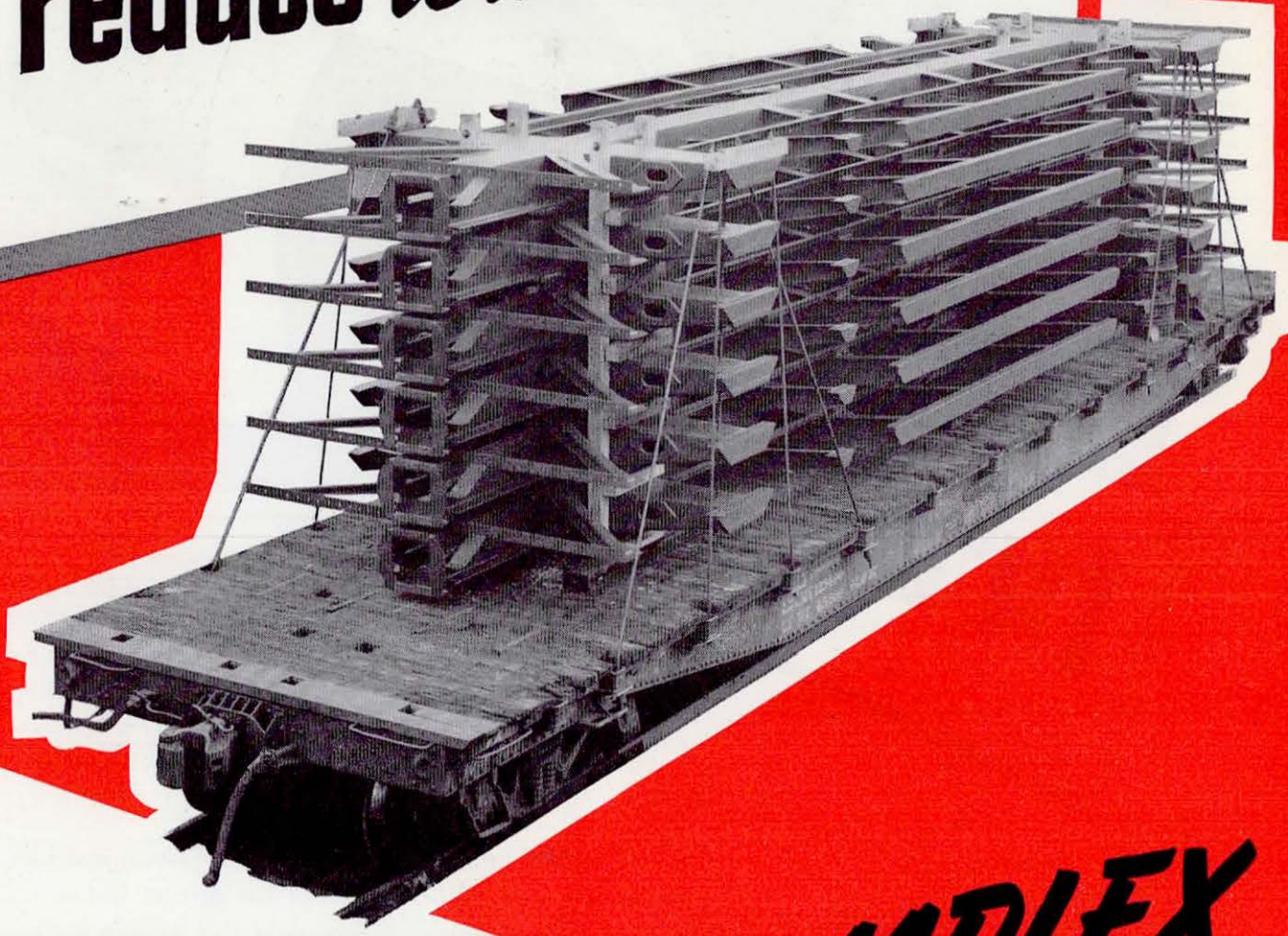
BUILT BY LIMA LOCOMOTIVE WORKS, INC.

TWENTY-FIVE more freight engines are completely SKF-equipped on engine trucks and tenders—making a total of 65 built on the New York Central since 1940. Availability of equipment NOW is extremely important. SKF Industries, Inc., Philadelphia, Penna. 5018

SKF

ROLLER BEARINGS

SIMPLEX SNUBBERS reduce "load-shifting"



Bulky loads often shift and have been known to "walk off" of rough riding flat cars.

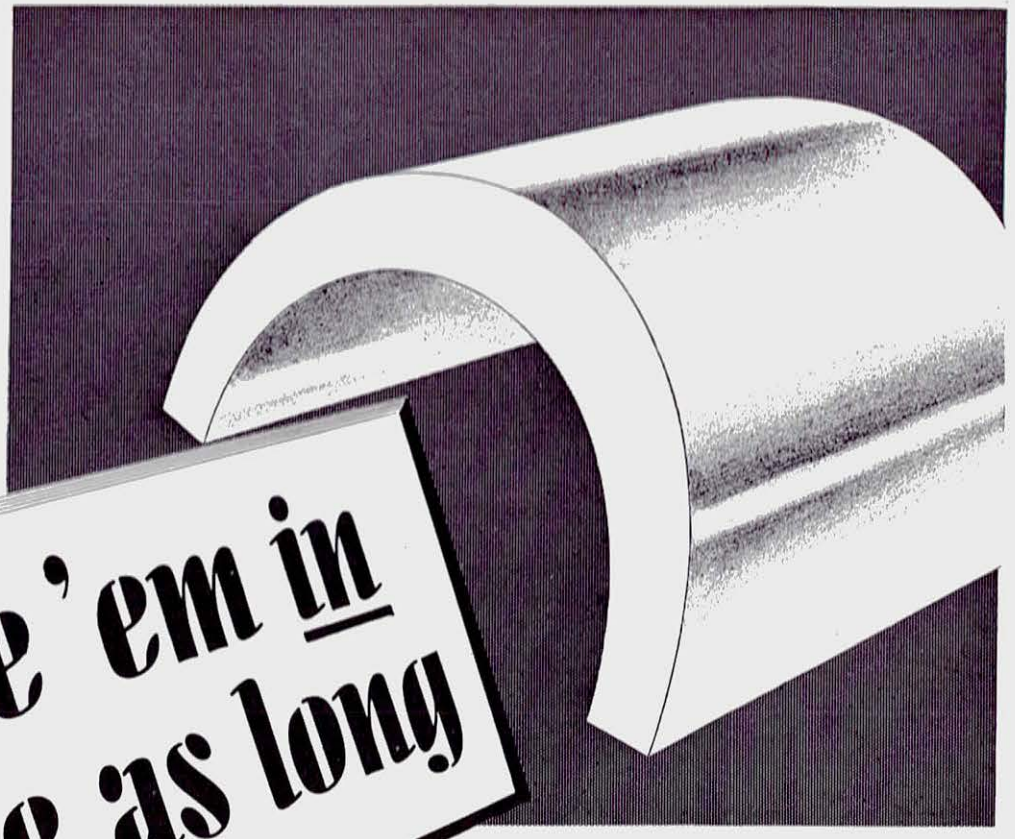
Simplex Snubbers make flat cars ride smoother. They help to keep the loads in place.

SIMPLEX
THE LONG-LIVED
SNUBBER

Reduces Claims

Lowers Maintenance

AMERICAN STEEL FOUNDRIES



Leave 'em in twice as long

SAVE brass! 15 roads today operate locomotives for as much as 250,000 to 300,000 miles—BEFORE turning driving journals—BEFORE re-machining crown bearings! The evidence piles up that *OIL-lubrication* . . . applied on the Hennessy *mechanical* principle . . . enables you to leave crown brasses IN twice to three times as long . . . and keep on using them indefinitely.

Today's urgent need to conserve brass—*alone* justifies your adoption of *OIL-lubrication* for driving journals. The even more compelling advantage—of getting locomotives OUT of the shop faster—keeping them in operation more hours out of the 24—follows as a matter of course. A brief note, mentioning the type of locomotives you operate, will bring prompt details showing how easily, quickly, Hennessy Lubricators may be installed *without* change to driving box or journal.

Hennessy Lubricator Co.,
75 West St., New York

HENNESSY LUBRICATOR

MECHANICAL LUBRICATORS
FOR *All* JOURNALS
OF RAILWAY EQUIPMENT

Journals run in a bath of oil, that flows faster as speed increases

STANDARD STOKERS

KEEP 'EM ROLLING AT TOP SPEED

NOW . . . more than ever before, increased hauling capacity of all steam motive power is needed to serve the Railroads and the Country. STANDARD STOKERS are a major factor in this effort because of their outstanding

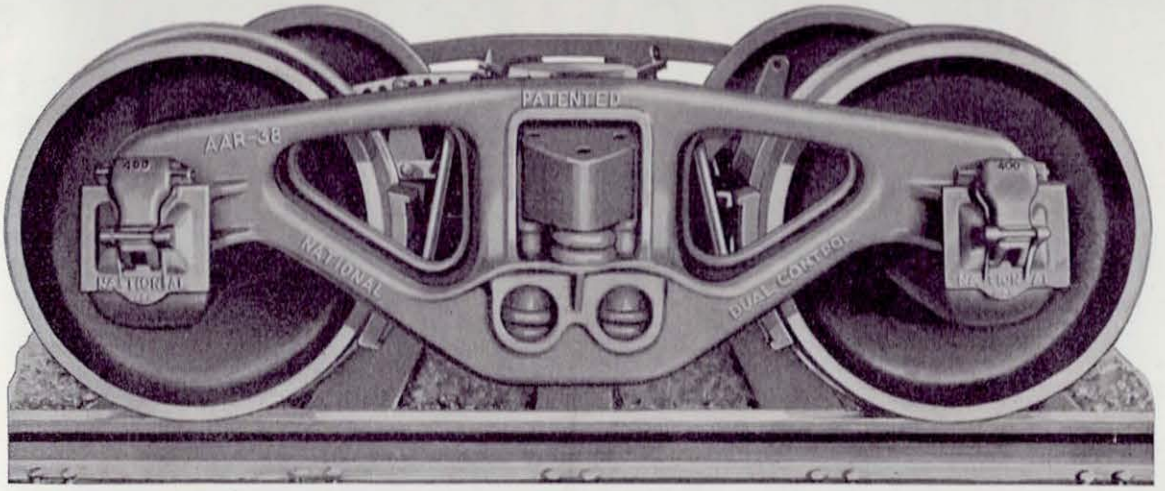
★ QUALITY ★ PERFORMANCE ★ DEPENDABILITY ★ SERVICE

THE STANDARD STOKER COMPANY, INC
NEW YORK • CHICAGO • ERIE •

SSC

REG. U. S. PAT. OFFICE

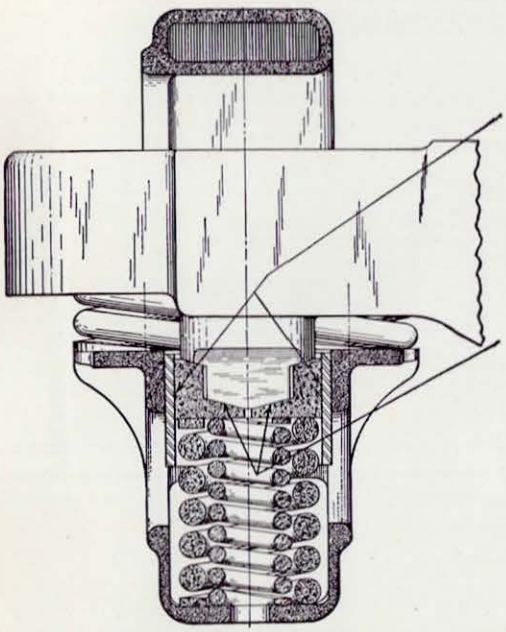
NATIONAL B-1 TRUCKS with DUAL CONTROL



National B-1 Trucks with Dual Control

assure safety and smooth riding in high speed service.

Built-in features that control both the vertical and horizontal oscillations assure superior riding qualities and greater safety.



Section Thru Control Unit

2 Units in Each Side Frame

CONTROL No. 1

Vertical oscillation or spring bounce is friction controlled by pressure of wedges against a steel bushing, during spring action. This protects the lading.

CONTROL No. 2

Horizontal oscillation is controlled by opposing angles of incline on the friction wedges, which center the bolster trunnions and resist forces which tend to throw the truck out of square. This is necessary for safety in high speed service.

Complies with all A. A. R. Specification Requirements

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Offices: CLEVELAND, OHIO

Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco

Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

Canadian Representatives: Railway and Power Engineering Corporation, Ltd., Toronto and Montreal

BALDWIN LOCOMOTIVES

Helping with the Biggest

Job in Railroad History

70 More Giants for

The Southern Pacific was one of the early users of Mallet locomotives and, in 1928, they rebuilt one of them as a single-expansion engine. In the same year they ordered ten single-expansion, articulated locomotives of the 4-8-8-2 type from Baldwin. These were followed by 16 locomotives in 1929, 25 in 1930, 26 in 1936 and 28 in 1939.

Baldwin is now delivering 40 of these locomotives and these will be followed by an additional 30 units, the order for which has just been placed. With the completion of this new order, the Southern Pacific will have in operation a total of 175 of these giants of the rails.

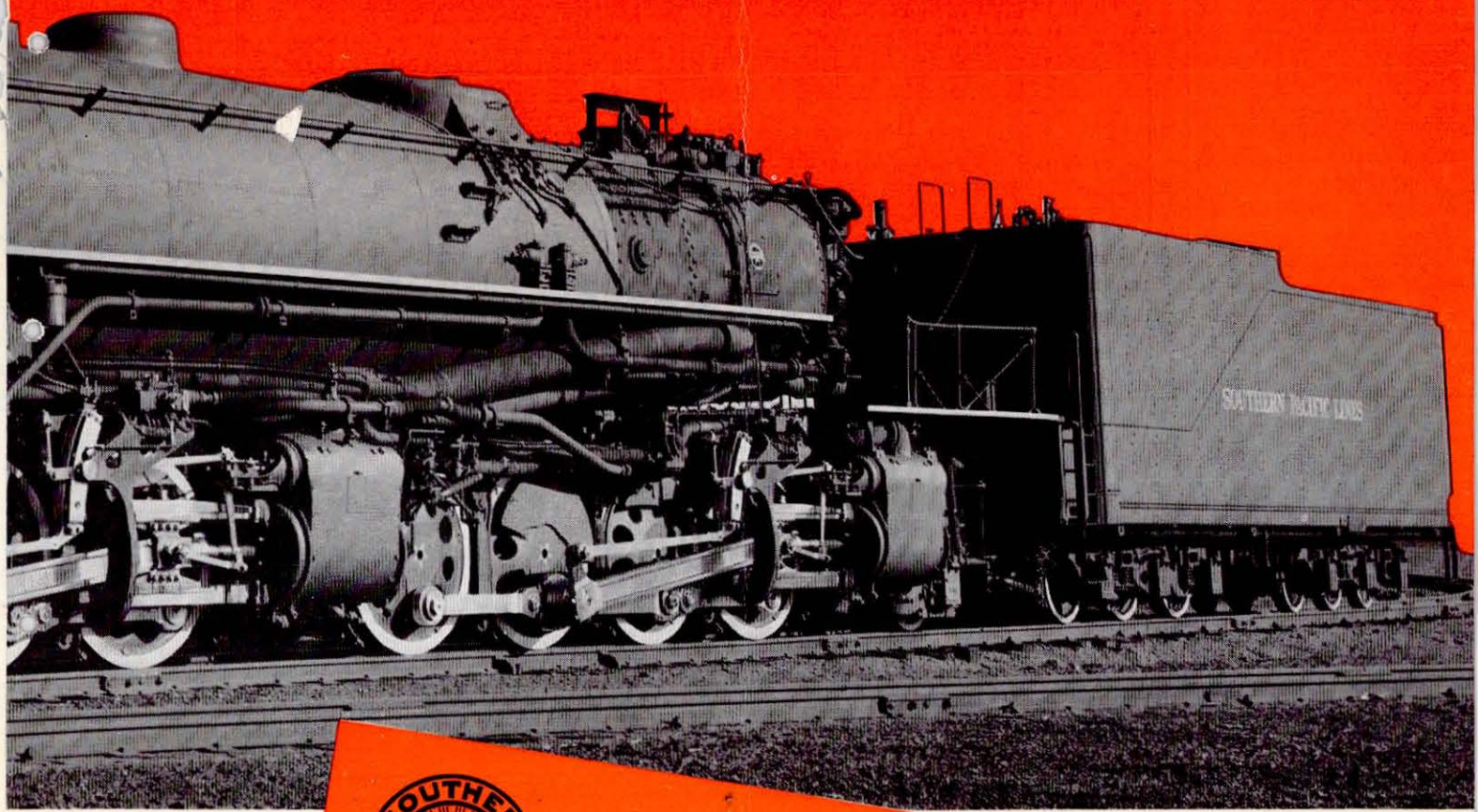
The 4-8-8-2 locomotives are used in both freight and passenger service on the heavy grades of the Sierra Nevada and other mountainous parts of Southern Pacific Lines. East bound, over the Sierras, three of these locomotives handle trains of 100 refrigerator cars, at high speeds and on regular schedules. In passenger service one such locomotive can handle the heaviest overland passenger trains over the 2.5 per cent ruling grade.

THE BALDWIN LOCOMOTIVE WORKS

BLW
THE BALDWIN GROUP

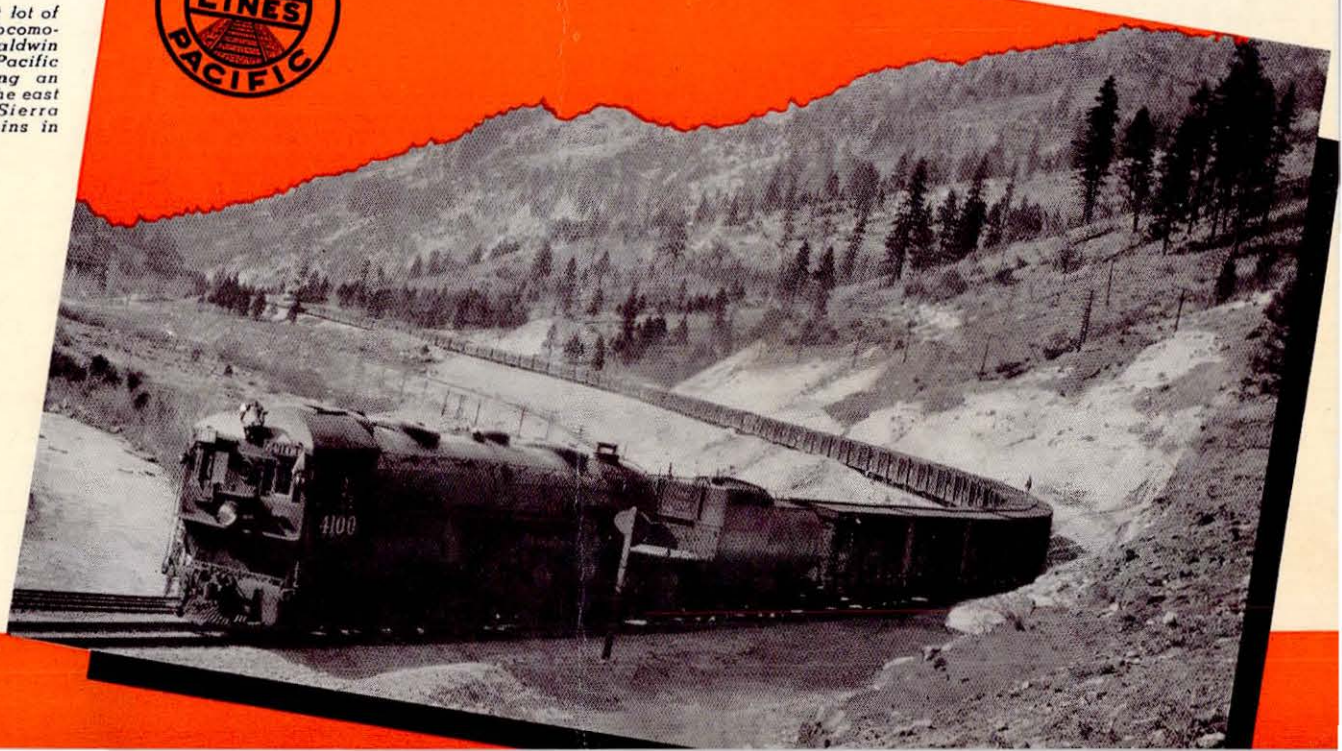
P H I L A D E L P H I A

the Southern Pacific



One of the first lot of 4-8-8-2 type locomotives built by Baldwin for the Southern Pacific in 1928, hauling an 84-car train up the east slope of the Sierra Nevada Mountains in California.

SOUTHERN PACIFIC LINES



SINEWS OF STEEL FOR THE GIANTS

Connecting rods . . . piston rods . . . axles . . . crank pins . . . rolled wheels for engine truck, trailer truck, and tender . . . driving tires . . . driving wheel centers—

These, plus other miscellaneous steel castings are the prideful contribution of Standard Steel to the new Baldwin locomotives now being delivered to the Southern Pacific Lines.

At Standard Steel the future operating economy of this equipment has been protected from the early open hearth beginnings of these castings and forgings. Rigid process control guards every phase of manufacture and accounts for the 147-year-old record of dependability by which Standard products are known.

Standard flies the Navy Bureau of Ordnance Flag and "E" Pennant in recognition of excellency and achievement in the production of Naval ordnance materiel.

FORGINGS • ROLLED WHEELS • TIRES • CASTINGS • SPRINGS

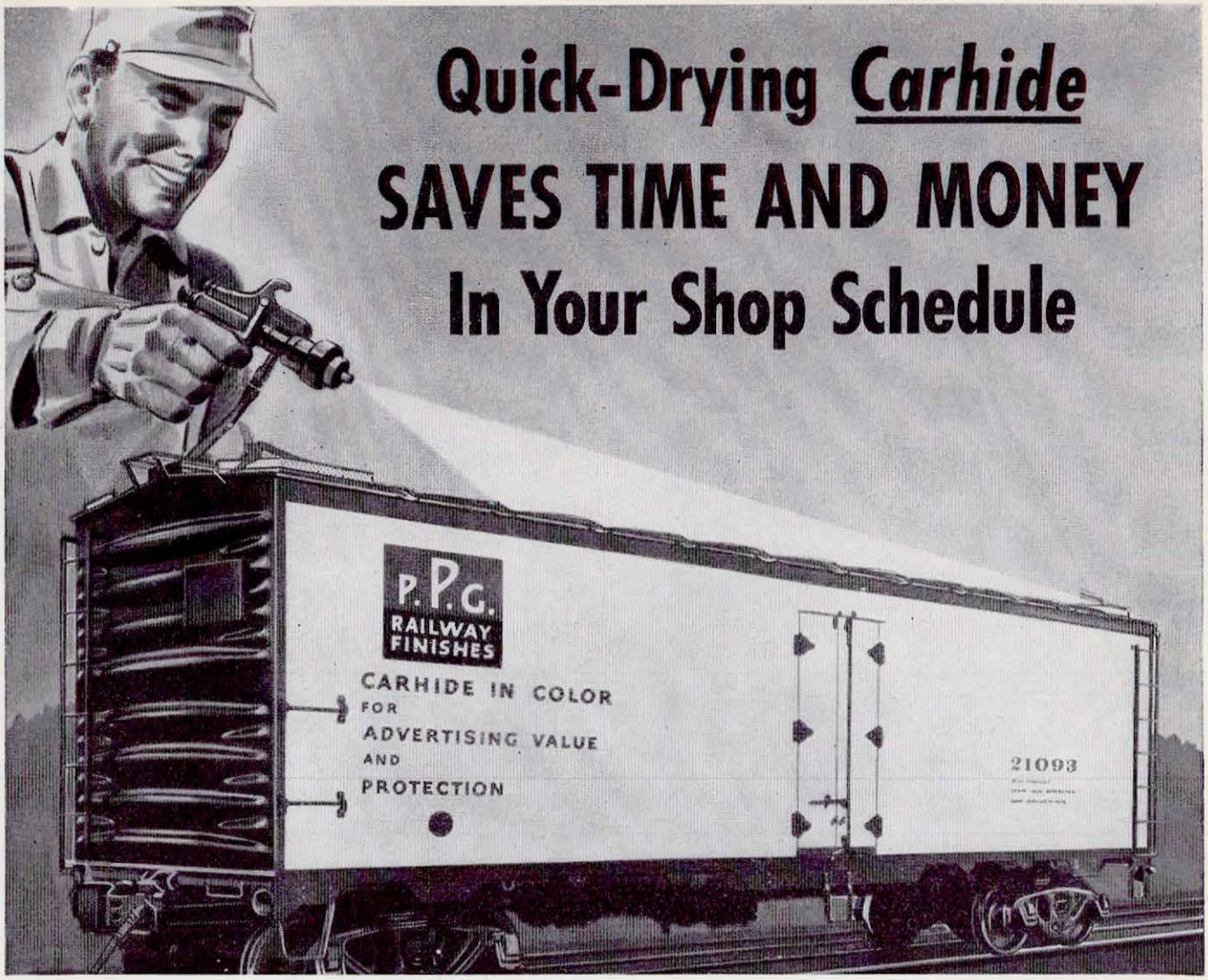
STANDARD STEEL WORKS

BLW THE BALDWIN GROUP

DIVISION OF

THE BALDWIN LOCOMOTIVE WORKS

PHILADELPHIA



WIDELY RECOGNIZED as the scientific finishing system for modern freight equipment, tough Carhide products are made to take burning sun, blasting sandstorm and wintry blizzard in their transcontinental stride!

Here's a line of railway finishes that will not only stand up under all conditions of weather and service, from coast to coast, but materially save time during shop schedule! These finishes are easy to apply and their smooth-as-glass surfaces dry speedily, saving payload hours for your rolling stock.

And now that more haulage capacity than ever is needed for war transportation, it is not only good business but a vital national service to protect railway equipment from deterioration.

Carhide finishes for metal cars contain rust-inhibitive pigments which check and prevent corrosion. The instructive story on protection afforded by Carhide is told in an interesting booklet that will be sent you on request. Also, if you have any problems of color design, the color experts of the Pittsburgh Studio of Creative Design will gladly submit plans for your approval.

PITTSBURGH PLATE GLASS COMPANY

Industrial Paint Division • Pittsburgh, Pa.

Factories: **Milwaukee, Wis.; Newark, N. J.; Houston, Texas; Los Angeles, Calif.; Portland, Ore.**

Thresher Varnish Company Division, Dayton, Ohio

PITTSBURGH PAINTS

RAILWAY FINISHES

Smooth as Glass

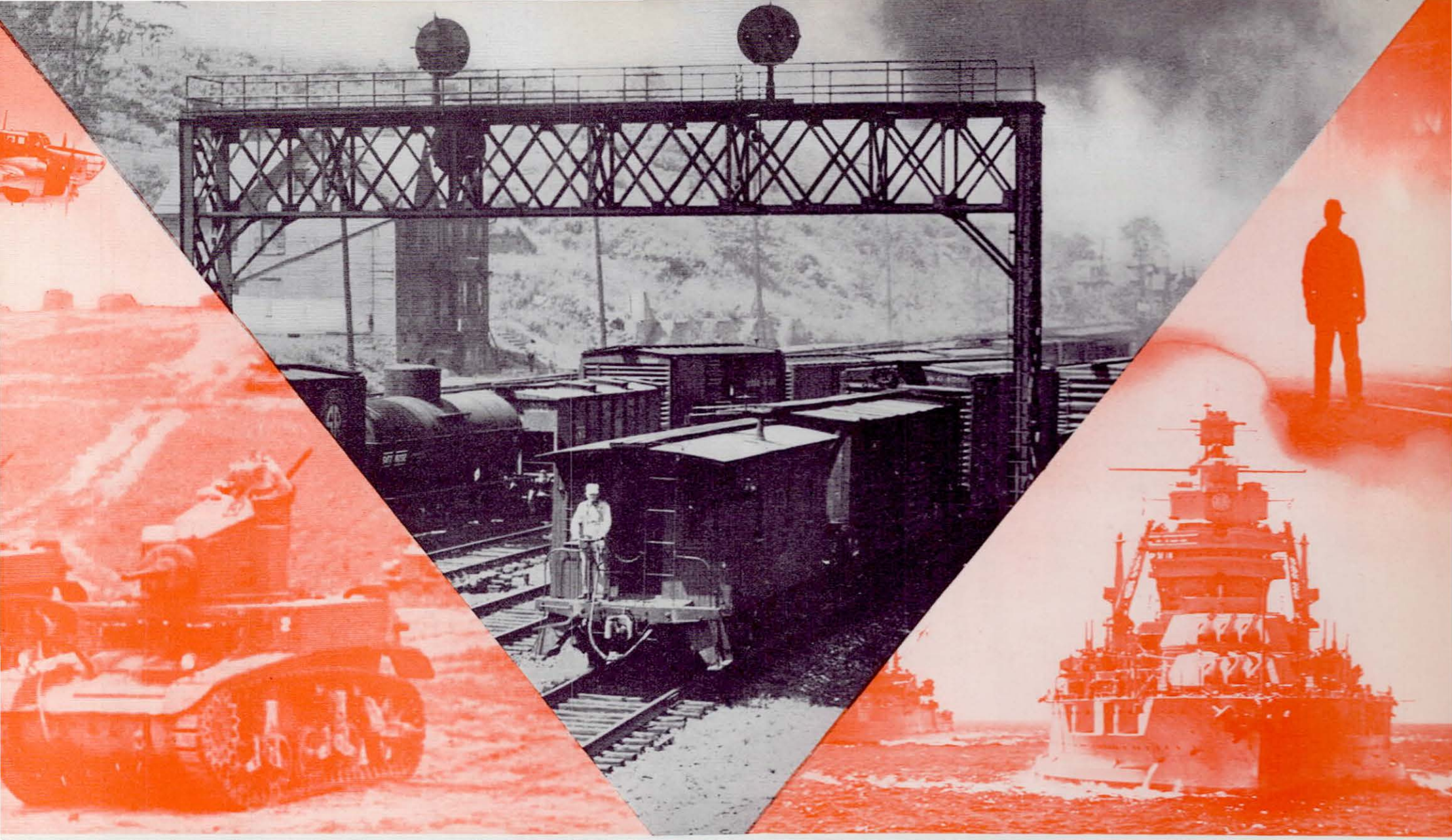
Pittsburgh Plate Glass Company
Paint Division, Dept. RA-4
Pittsburgh, Pa.

Please send me your booklet on Carhide Finishes.

*Name*_____

*Address*_____

*City*_____ *State*_____



FREIGHT PROGRESS IN WAR

Keeping the Freight Rolling — a Vital War Need — Will Be the Subject of the Entire May 23 *Railway Age*

Editorial Program
May 23, 1942, Issue

THE magnitude of the editorial program planned for the Freight Progress in War Number is indicated by the following subject headings:

- Editorial: What the Railways Are Doing for America
- Statements from Key Executives
- Organization of the Railways in Wartime
- Performance of the Railways in Wartime
- The Freight Car Situation
- The Locomotive Situation
- The Railway Shop Situation
- The Maintenance of Track and Structures
- The Signal Situation
- Materials the Railways Need
- The Problem of Labor Supply
- Statements from Key Railway Labor Executives
- The Supply Industry in Wartime
- What Shippers Are Doing
- Canadian Railways in Wartime

CONTINUED railway freight progress in wartime is vital to the railroads . . . to manufacturers . . . and to the nation . . . because transportation is indispensable to all war production, and the railroads are the backbone of transportation. The nation's unprecedented production program calls for an amount of railway service and equipment that will be equal to war demands.

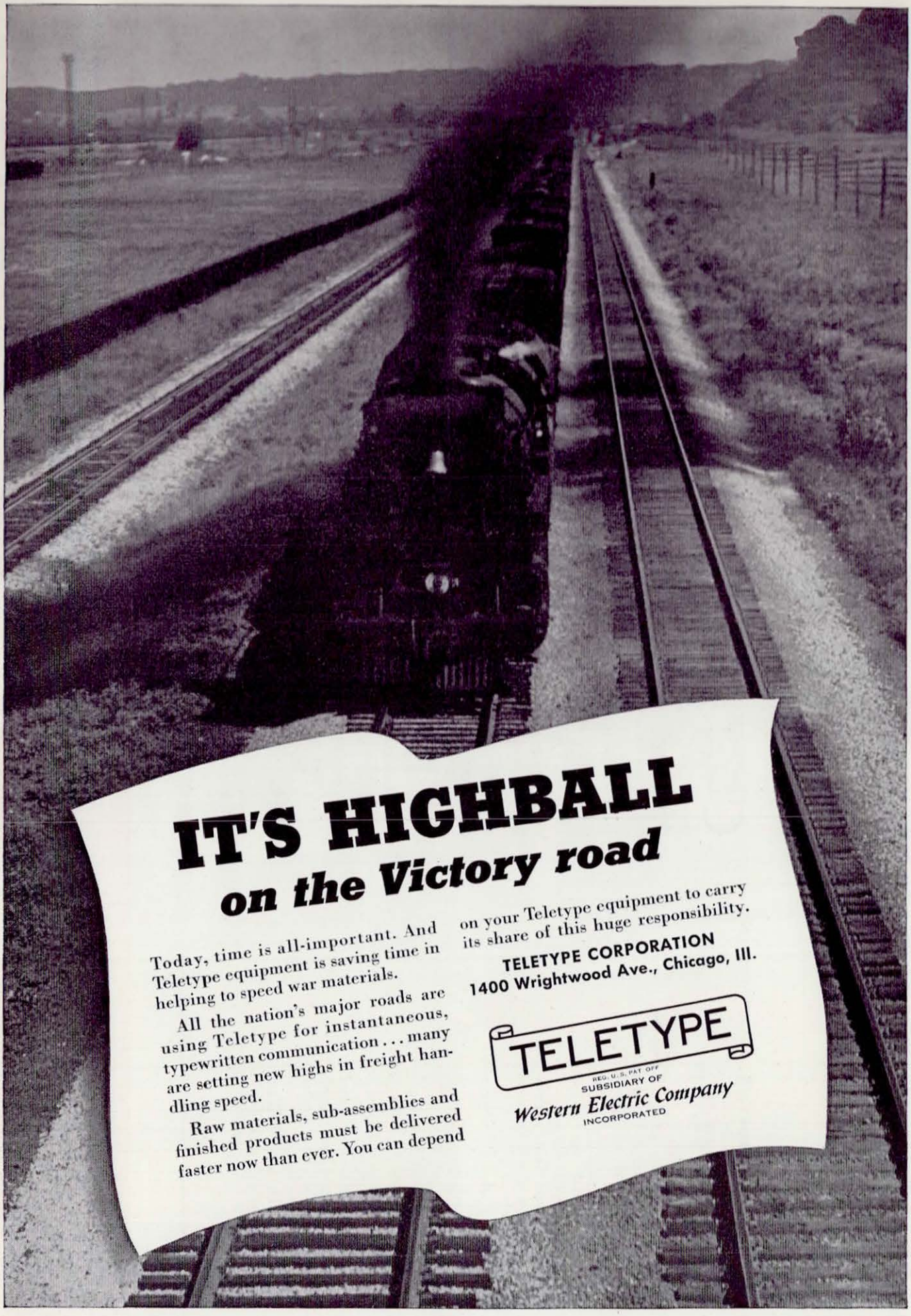
To give an impressive and timely voice to the railways' part in the war program, the May 23, 1942, issue of the *Railway Age* will be devoted in its entirety to the subject, "Freight Progress in War". Through a wealth of factual evidence, this issue will portray the magnitude of the railways' undertaking in serving the nation's war transportation needs. It will emphasize the importance of filling the railways' essential requirements for materials and supplies. It will be a concerted effort to strengthen the ability of the nation's transportation system to meet the big test ahead.

To the railroads individually, the advertising pages of the May 23 issue offer the opportunity to bring home to the shippers of the United States and Canada, with *full impact*, the story of their freight services under war conditions. To manufacturers, this issue offers the means of telling what their products and services are doing to keep the freight rolling . . . featuring specific equipment, services and product-information that aid in producing more and better transportation.

Make Your Plans Early

The comprehensive editorial program of the Freight Progress in War Number, and the mechanical problems involved in publishing this issue, make it important to plan your advertising message early. A number of railroads and manufacturers are already proceeding with the preparation of their advertisements for the May 23 issue. Your nearest *Railway Age* office will furnish more detailed information.

Railway Age . . . May 23, 1942, Issue


IT'S HIGHBALL
on the Victory road
Today, time is all-important. And Teletype equipment is saving time in helping to speed war materials.
All the nation's major roads are using Teletype for instantaneous, typewritten communication... many are setting new highs in freight handling speed.
Raw materials, sub-assemblies and finished products must be delivered faster now than ever. You can depend on your Teletype equipment to carry its share of this huge responsibility.
TELETYPE CORPORATION
1400 Wrightwood Ave., Chicago, Ill.
TELETYPE
REG. U. S. PAT. OFF.
SUBSIDIARY OF
Western Electric Company
INCORPORATED

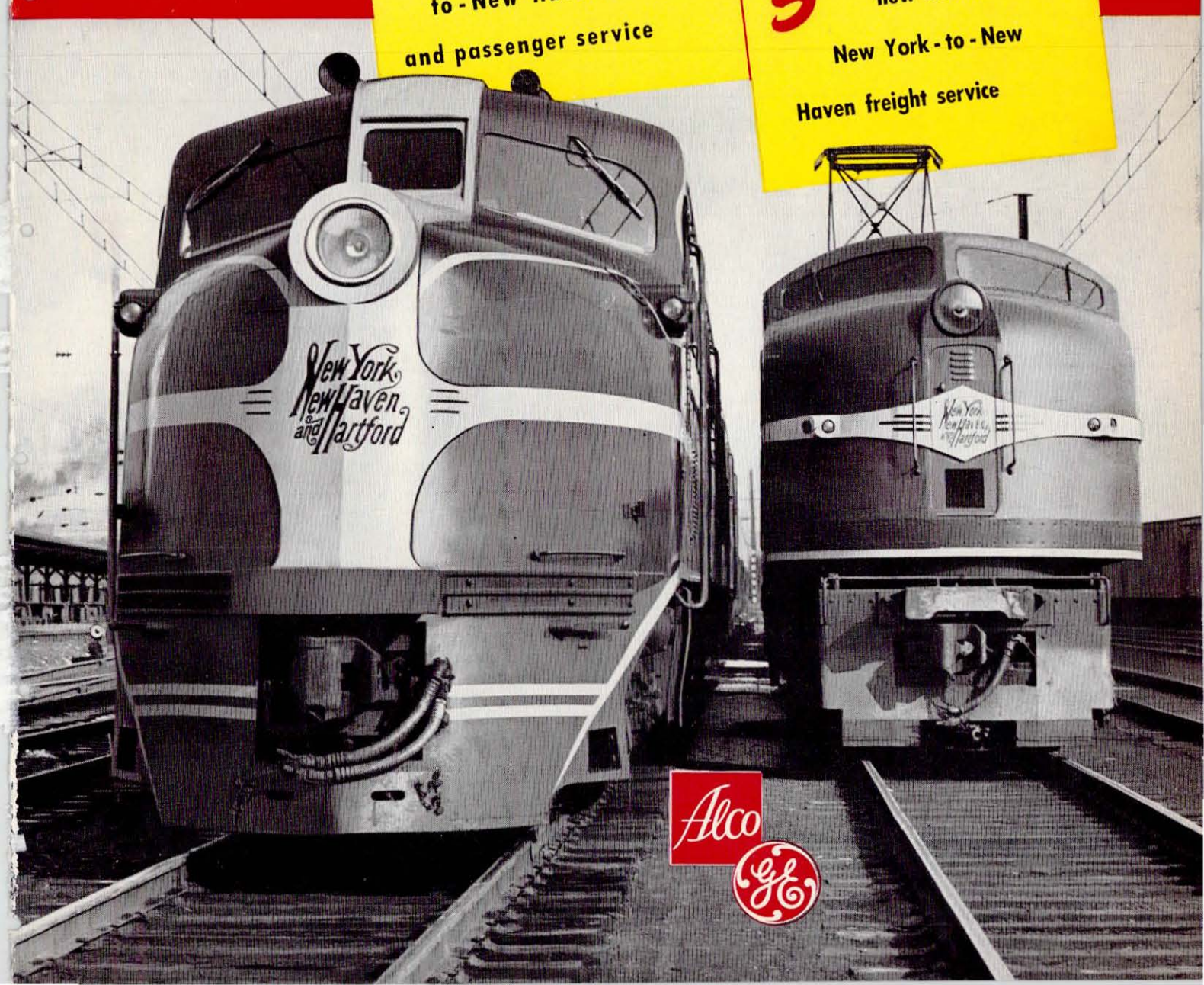
New Power

FOR THE NEW HAVEN

. . . an impelling answer to the wartime need for better transportation than ever!

20 new 2000-hp diesel-electrics for Boston-to-New Haven freight and passenger service

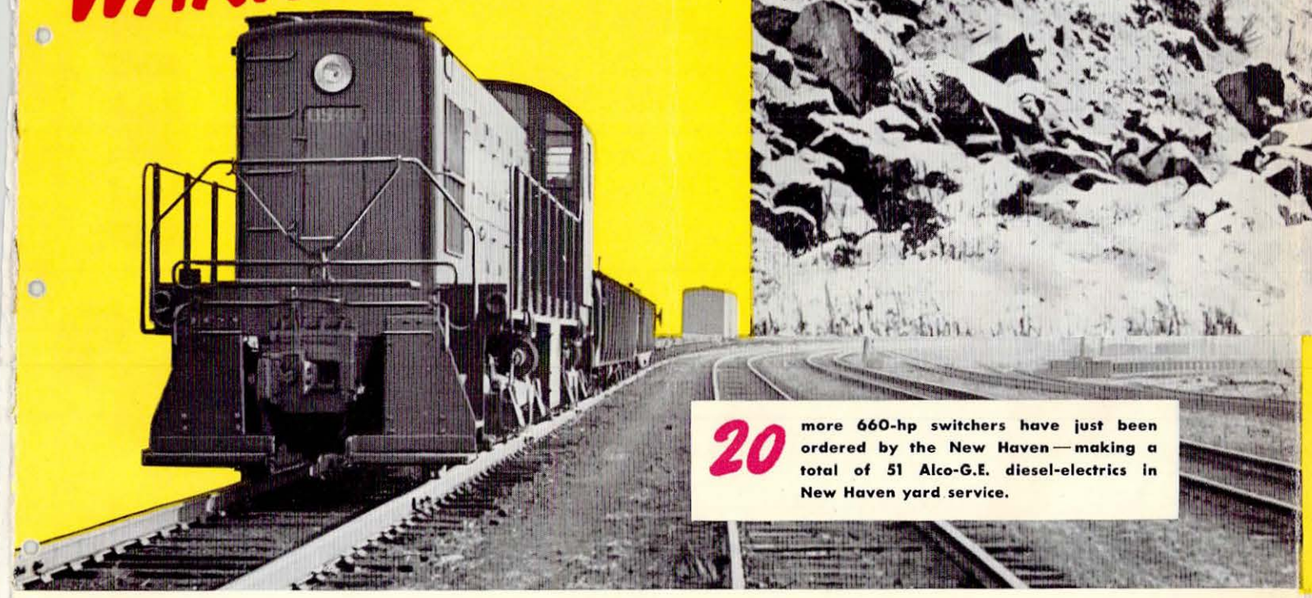
5 new electrics for New York-to-New Haven freight service



Since 1907, electric motive power on the New Haven has been demonstrating its ability to do a job with the fewest locomotives. Geared for 70 mph, the five new G-E units on order will be used exclusively in freight service between New York and New Haven. Fifteen similar units, geared for 90 mph, are in passenger service on this same run.

The G-E 44-ton diesel-electric (left) is breaking up a train that has just been brought into Taunton, Mass., by the Alco-G.E. 660-hp diesel-electric (right). Availability of Alco-G.E. diesel-electric switchers is high, *stays high*, year after year.

ALCO-G.E. POWER STEPS UP THE NEW HAVEN'S WARTIME PACE



20 more 660-hp switchers have just been ordered by the New Haven—making a total of 51 Alco-G.E. diesel-electrics in New Haven yard service.

Working round the clock, these 4000-hp diesel-electrics handle two freight and two passenger trains between New Haven and Boston every day. Operating back-to-back, they do not have to be turned around at terminals, and they can be operated as single units. They are the only heavy-duty, streamlined diesel-electrics operating in both freight and passenger service.

This 44-ton light-road-and-switching diesel-electric is operating 18 hours a day at Taunton, Mass. One of seven G-E 44-tonners in New Haven service, it is capable of an all-purpose job: switching, accumulating trains, and hauling these trains on the road. Whenever one of these units goes to work, two steamers can be released for other service.

TEN Alco-G.E. 2000-hp diesel-electrics were ordered by the New Haven last year. Their splendid performance gives evidence of what can be expected from 10 more units just ordered.

These locomotives are doing a real job—*and the only one of its kind.* Operating in multiple as 4000-hp units, with a control cab at each end to eliminate turn-arounds at terminals, they are making four trips daily between Boston and New Haven. They power two passenger trains by day and two freight trains at night, and in the latter operation handle 4500 tons with ease.

In New Haven yards, 31 Alco-G.E. 660-hp diesel-electric switchers are speeding work, keeping on the job round the clock, and saving valuable man-hours by their freedom from maintenance difficulties. Twenty more of these 660-hp units have just been ordered.

Their ability to work hard, fast, and steadily is the keystone of their contribution to today's job. By reducing the time cars must spend in yards, they're making it possible for those cars to do more work.

For lighter yard work, the New Haven has seven G-E 44-ton diesel-electrics in service. Compact and sturdy, they require little attention, maintain very high availability, and make it possible to transfer heavier motive power to jobs where every pound can be effectively put to work.

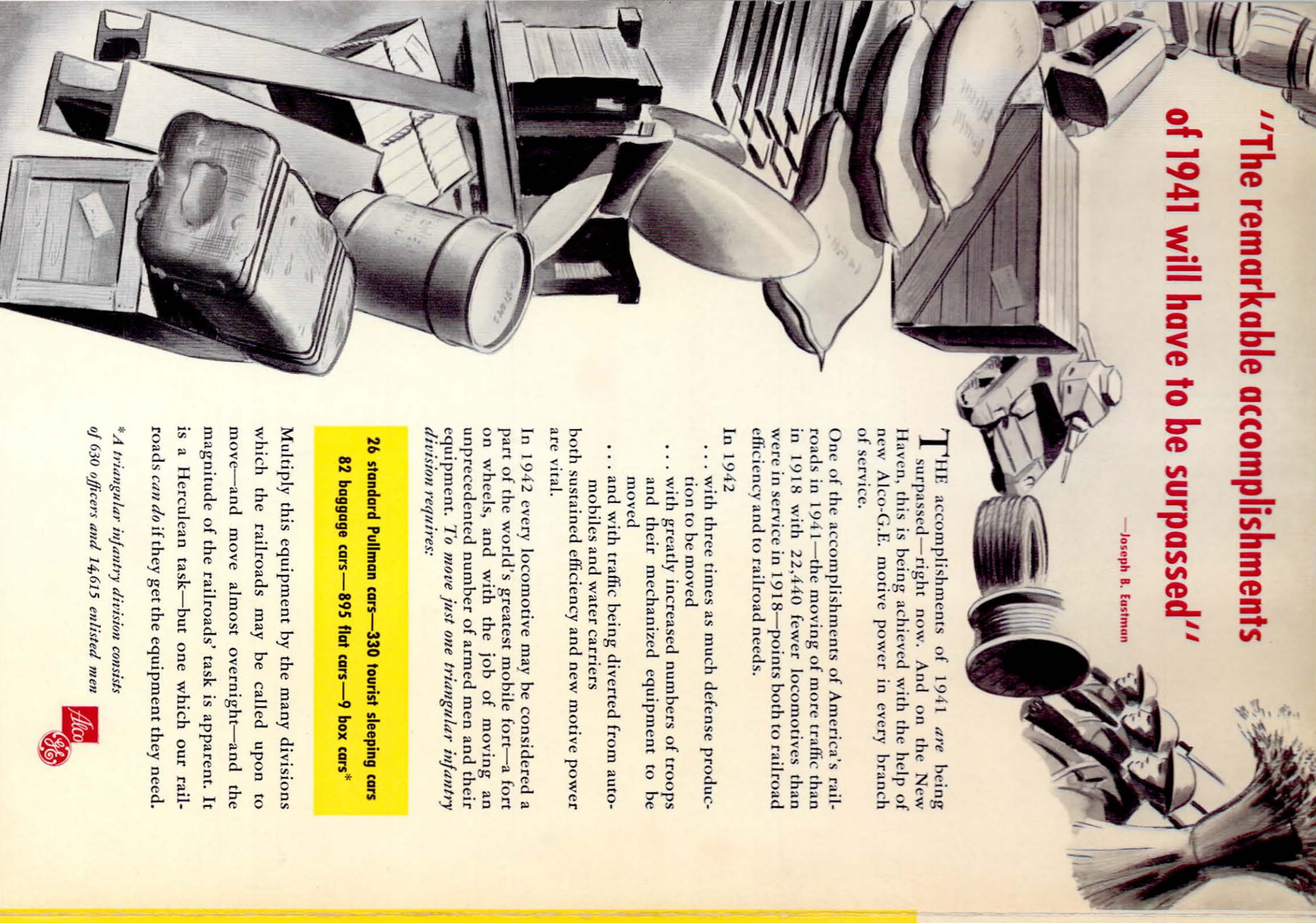
Scheduled for delivery soon are five new G-E electrics for New York-to-New Haven freight service. They are going to work where the traffic is heavy, and their overload capacity will give them the extra punch to get heavy loads under way fast, and maintain high schedule speeds over a rolling profile.

Fifteen G-E electric locomotives now in New Haven service have demonstrated the ability of this kind of power to do a job with the fewest locomotives.

AMERICAN LOCOMOTIVE Alco GE GENERAL ELECTRIC

"The remarkable accomplishments of 1941 will have to be surpassed"

—Joseph B. Eastman



THE accomplishments of 1941 *are* being surpassed—right now. And on the New Haven, this is being achieved with the help of new Alco-G.E. motive power in every branch of service.

One of the accomplishments of America's railroads in 1941—the moving of more traffic than in 1918 with 22,440 fewer locomotives than were in service in 1918—points both to railroad efficiency and to railroad needs.

In 1942

. . . as much defense production to be moved

. . . with greatly increased numbers of troops and their mechanized equipment to be moved

. . . and with traffic being diverted from automobiles and water carriers both sustained efficiency and new motive power are vital.

In 1942 every locomotive may be considered a part of the world's greatest mobile fort—a fort on wheels, and with the job of moving an unprecedented number of armed men and their equipment. *To move just one triangular infantry division requires:*

26 standard Pullman cars—330 tourist sleeping cars
82 baggage cars—895 flat cars—9 box cars*

Multiply this equipment by the many divisions which the railroads may be called upon to move—and move almost overnight—and the magnitude of the railroads' task is apparent. It is a Herculean task—but one which our railroads *can do* if they get the equipment they need.

**A triangular infantry division consists of 630 officers and 14,615 enlisted men*

Alco G-E

VICTORY'S TRAFFIC IS MOVING WITH *all 3*

. . . and Alco-G.E. builds ALL 3

Put each one to work where it's economically best suited.

TODAY, when every second counts, it is more important than ever to use the power best suited to each job. And it is our job to build, in all three classes of power—steam, electric, and diesel-electric—the equipment which meets your needs best.

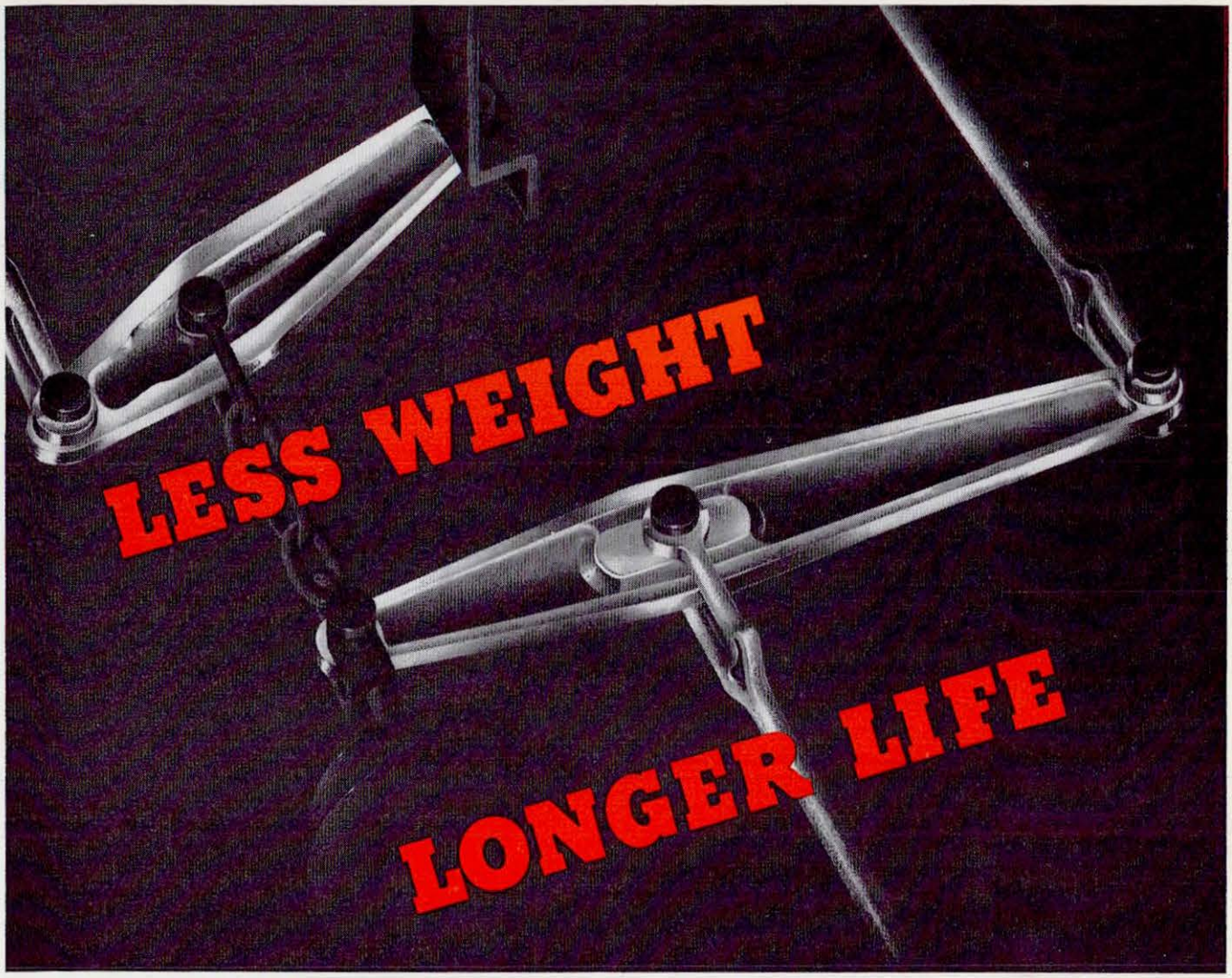
American Locomotive has been building steam power for a century. General Electric has been building electric locomotives for more than 50 years. Together, we manufacture a complete line of diesel-electric locomotives.

Thus, Alco-G.E. equipment spans the entire range of railroad motive power. It is at work on American railroads in every class of service. It makes the most effective use of money invested in it.

We can most effectively do *our* part in the transportation job by helping you make the necessary analysis of your requirements, and furnishing the right power. See your Alco or G-E representative.

AMERICAN LOCOMOTIVE Alco GE GENERAL ELECTRIC

114-20-9940



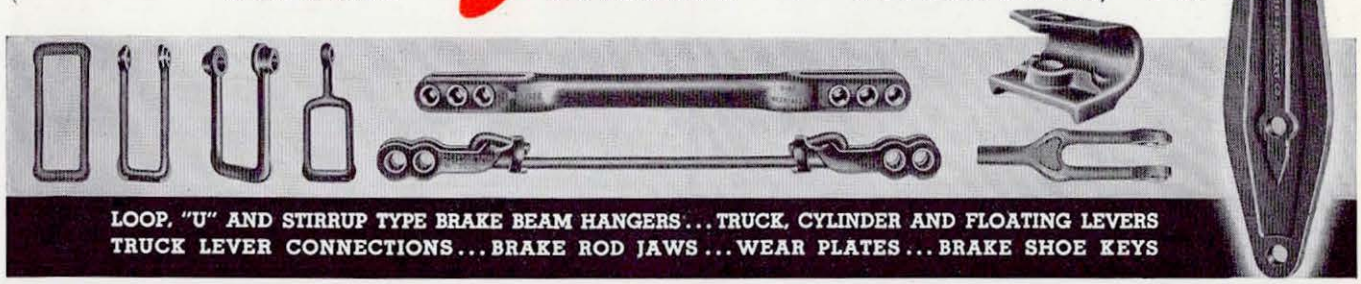
Schaefer Forged Steel Foundation

Brake Gear Parts take a burden off

overworked repair tracks

Schaefer EQUIPMENT COMPANY

KOPPERS BUILDING • PITTSBURGH, PA.

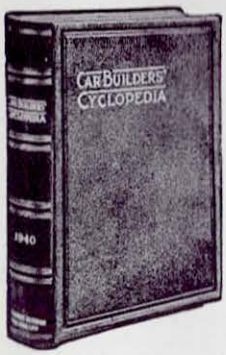


LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS... TRUCK, CYLINDER AND FLOATING LEVERS
TRUCK LEVER CONNECTIONS... BRAKE ROD JAWS ... WEAR PLATES ... BRAKE SHOE KEYS

Valuable Books for Your Library

CAR BUILDERS' CYCLOPEDIA of American Practice

Edited by ROY V. WRIGHT
Editor of Railway Mechanical Engineer



Since 1879 this book has been recognized as the standard authority wherever American built rolling stock is in use. The Fifteenth Edition has been thoroughly revised and enlarged to include an entirely new 50-page Car Shops Section, and a new chapter on Air Conditioning. About one-third of the edition is entirely new and the revisions include the deletion of obsolete definitions and the addition of new ones in the 100-page Dictionary of Terms.

1940. 15th. 1,400 pages, 3,000 illus., 9 x 12, buckram, $5.00; leather, $7.00

When Railroads Were New

By CHARLES FREDERICK CARTER

A fascinating human interest story of the early American and Canadian railroads and of the men who built and ran them. The author, an old railroad man, tells of the beginnings of the Erie, the Pennsylvania, the Baltimore and Ohio, the New York Central, the first Pacific railroad, the Santa Fe, the Rio Grande, the Canadian Pacific and other lines. It is illustrated with reproduction of wood cuts of early locomotives and railroad scenes.

4th (Centenary). 338 pages, 17 illustrations, 6 x 9 inches, cloth. $2.50.

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( ) Mastering Momentum
( ) Railroad Electrification
( ) United States Regulations
( ) When Railroads Were New
( ) Car Builder's Cyclopedia
( ) Diagram of 4-6-4 Locomotive

Name .....

Address .....

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Company .....

Position .....

(This offer is limited to the United States) R.A. 4-11-42

Mastering Momentum

By LEWIS K. SILLCOX
First Vice-President, The New York Air Brake Company

The author explans the features of high speed operation which have been responsible for such innovations in braking as electro-pneumatic combinations, automatic rail sanding, retardation control, and wheel slide detectors in passenger service; and delayed emergency, rapid quick service propagation and positive release of freight car brakes. The influence of heavy, sustained braking upon wheel and car truck design is discussed, together with an explanation of the responsibility of high braking temperatures upon the shelling and thermal cracking of steel wheels. Spring suspension systems, dynamic effects upon riding qualities, track stresses, and weight transfer tendencies are analyzed. Draft gear design and its relation to shock absorption and the running stability of freight and passenger cars are investigated.

1941. 275 pages, 130 illus., 6 x 9, cloth, $2.50

Railroad Electrification and the Electric Locomotive

By ARTHUR J. MANSON
Manager, Transportation Sales Department, Westinghouse Electric & Manufacturing Company

Written primarily for railway officials and operating men who desire a general knowledge of the design, construction, and operation of electric locomotives and of their application to different kinds of railroad service. Typical problems encountered in electrification of steam railroads are outlined, together with their solutions. Fundamental principles are stressed, and the book is illustrated with photographs, detail drawings, diagrams and charts.

1925. 2nd, 332 pages, 146 illus., 6 x 9 inches, cloth, $3.00

United States Regulations

For Steam and Other Than Steam Locomotives

Laws, rules and instructions for inspection and testing of steam locomotives and tenders, and other than steam locomotives, with interpretations, rulings and explanations on questions raised relative thereto, as prescribed by the Bureau of Locomotive Inspection. Includes safety appliance standards for locomotives as fixed by order of the I. C. C.

1937. 220 pages, complete index, 4¼ x 6½, flexible, $1.25

Diagram of a 4-6-4 Hudson Type Passenger Locomotive

Shows 315 numbered parts, including all the latest appliances. Elevation scale drawings of locomotive and tender and four cross sections.

1941. 40 x 30-inches, flat or folded, $.50

PEERLESS DRAFT GEARS PROVIDE FOR AN INCREASE IN PAYLOAD WITH THE ULTIMATE IN PROTECTION

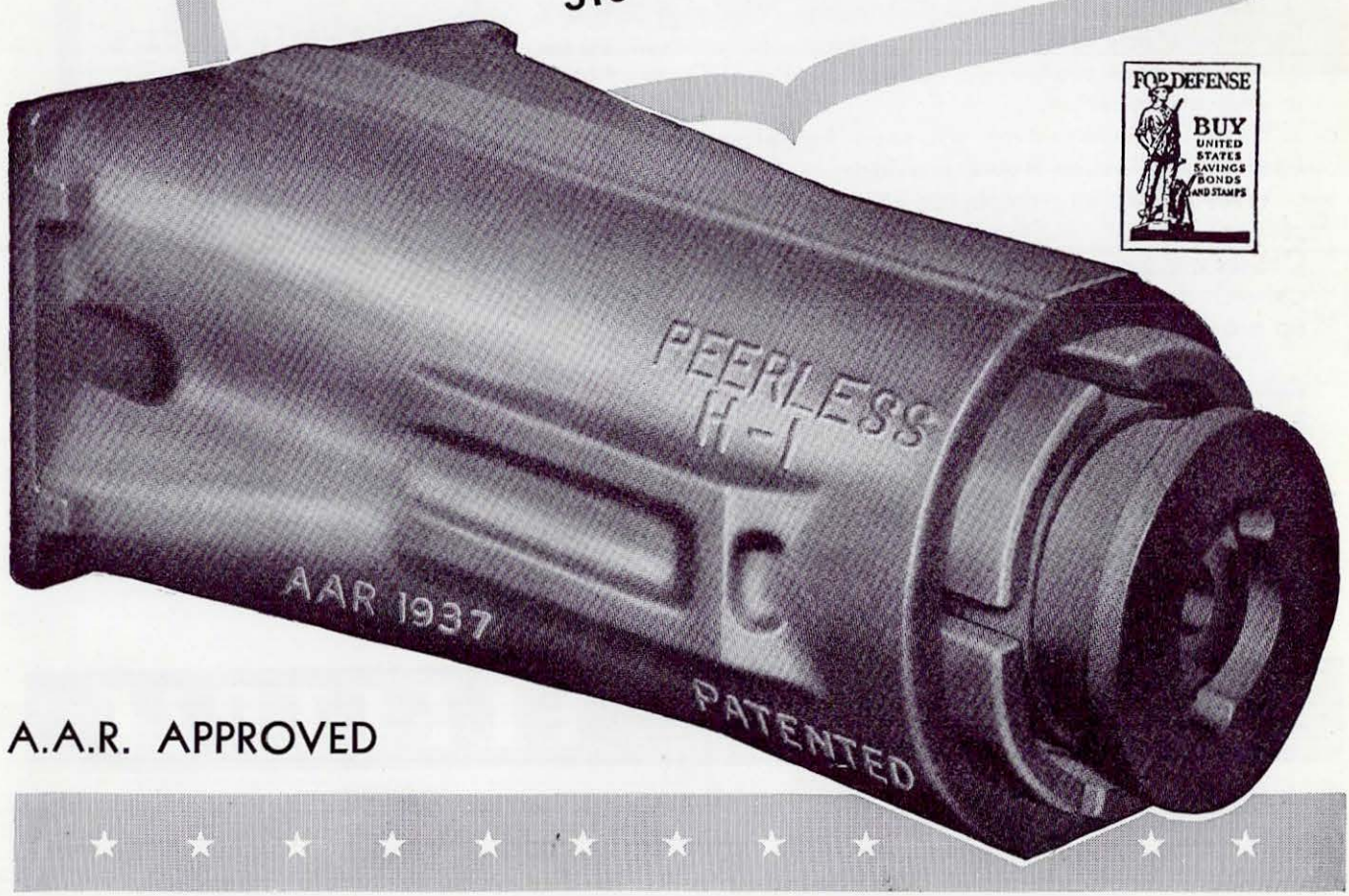
THE Peerless Type H-1 Draft Gear was specifically designed not only to offer a well coordinating mechanism for buff and draft, but also to give the freight car no opportunity to carry a heavier payload with increased protection.

A heavier payload can be accomplished through the weight saved in the construction of the Peerless Draft Gear. It is an accepted fact that the railroads of today are interested in lighter and stronger construction to increase their operating efficiency.

Since the protection of car and lading is paramount, the Peerless Draft Gear meets this obligation with 100% production tests for capacity, travel and smooth action.

The Peerless Type H-1 Draft Gear is light in weight, yet rugged in construction, consistent in action, capable of long wear and trouble free service.

PEERLESS EQUIPMENT CO.
310 So. Mich. Ave., Chicago, Ill.



A.A.R. APPROVED

Is this telephone on your desk?

P-A-X
THIS IS YOUR NEW P-A-X TELEPHONE
.....IT GIVES YOU INSTANT ACCESS TO ALL EMPLOYEES AND ALL DEPARTMENTS— USE IT FREELY
Talk! Don't Walk!

This telephone is not an ordinary one. It belongs to P-A-X (automatic interior telephone system)—the *modern* means of making more productive the working time of *every person* in your organization.

Today, more than ever, you need the better, faster, easier intercommunication P-A-X provides.

With P-A-X, any employee can talk with any other employee instantly—without leaving his desk or machine. Orders can be transmitted, information exchanged, records corrected—all at lightning-fast speed and without slowing up productive activity.

When you install a P-A-X system, you purchase it outright—there are no rentals to pay. Railroads already using P-A-X include Illinois Central, Santa Fe, New York Central (Mich. Cent.), Pennsylvania, North Western, Rock Island, B & O and many others. We invite inquiries concerning P-A-X, which we believe we will be able to supply in situations important to and keyed into the national war effort.

HERE'S HOW P-A-X HELPS RAILROAD OPERATION:

1. Links scattered departments into one easily-directed whole.
2. Promotes coordination among employees.
3. Provides *secret* intercommunication—no one can "listen in."
4. Is instantly available 24 hours a day.
5. Improves service to customers.
6. Provides special control services tailored to individual needs.

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MAKERS OF TELEPHONE, SIGNALING AND COMMUNICATION APPARATUS
ELECTRICAL ENGINEERS, DESIGNERS AND CONSULTANTS

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With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

Vol. 112 April 11, 1942 No. 15

In This Issue

Research and Machines—Key to Track Maintenance in War . . Page 745

An abstract of an address by A. E. Perlman, Chief Engineer of the Denver & Rio Grande Western, in which he presents a plan to conserve man power and materials and to strengthen the railroads' competitive position.

Diesel-Electrics for Freight and Passenger Service 749

Details regarding the New Haven's new Alco-G. E. motive power units designed to move both kinds of trains every day with no relief power at terminals.

Fixes 1942 Equipment Program 753

A discussion of the latest War Production Board ruling on the control of production and delivery of cars and locomotives.

EDITORIALS

. . . With Good Intentions 741
Hours and Wages for Continuous Operation 742
Block System for Medium Traffic Lines 743
Substitute Materials 744

GENERAL ARTICLES

Research and Machines—Key to Track Maintenance in War, by A. E. Perlman 745
Diesel-Electrics for Freight and Passenger Service 749
Fixes 1942 Equipment Program 753
Car Conservation—A Shipper's Viewpoint 754
Australia's Railways Built to Many Gages 754
Air Travel Statistics Come of Age 756

NEWS 758

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

PRINTED IN U. S. A.

EXPEDITE CLASSIFICATION AND SWITCHING

with the "UNION" YARD COMMUNICATION SYSTEM

Right: Instructions are being transmitted by the yard conductor at the top of the hump. *Below:* Instant voice communication enables the engineman to complete work in shorter time.

CLEAR and instant voice communication between yard offices and switch engine crews, in any yard or switching area, is provided by the "Union" Yard Communication System, whether engines are standing or in motion. Classification and switching are expedited and more work per freight car and switching engine is made possible. Car handling delays in yards and switching areas are reduced.

Acceleration of classification and switching is necessary today more than ever. The advantages gained from installation of this effective communication system are explained in our Bulletin No. 158 copies of which we shall be glad to supply upon request.

FEATURES:

1. Instructions are given directly in speech.
2. Communication may be one-way or two-way.
3. One-way equipment is portable and may be quickly transferred from one locomotive to another.
4. One-way equipment can be converted to two-way by the addition of a few parts.
5. Communication is private.
6. The system is not subject to government radio regulation and no operating licenses or permits are required.

UNION SWITCH & SIGNAL COMPANY
SWISSVALE, PA.

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

The Week at a Glance

GEN. ORDER NO. 1: The divisions which the railroads must pay the trucks, to which the ODT 10-ton minimum carload order will force them to divert l.c.l., will, on some traffic, leave the roads holding the bag—without even their out-of-pocket expense covered. The order zealously defends the railroads against apparently (and only *apparently*) wasteful use of equipment, but it does not protect the trucks against waste by requiring *them* to divert their uneconomic tonnage to the rails. These are some of the deficiencies of the order—cited in the leading editorial herein as reasons why the ODT ought to follow the advice of the president of the National Association of Shippers Advisory Boards, and postpone making the order mandatory till fall.

●

PEGLER FOR TRAFFIC CZAR: In his syndicated article dated at Tucson on April 8, Westbrook Pegler drew attention to the great trucks which ply the highways in that region—some of them with "as many as 22 huge tires on the ground," on which they "tear over mountain and desert at high speed." Mr. Pegler reports that at 50 m. p. h. rubber wears out three times as fast as at 25 m. p. h. The ODT could, seemingly, make advantageous use of Mr. Pegler's specialized knowledge in its division of traffic movement; because that division is now working on the assumption that transportation will be conserved by removing freight from box cars which will then move empty, and using it to take more truck-miles out of our dwindling rubber supply.

●

LET'S NOT EXAGGERATE: The flaws in General Order No. 1 are so elementary and so flagrant that the temptation is strong to condemn the whole scheme as a piece of typical impractical political impertinence. The editorial viewpoint adumbrated herein falls far short of such condemnation. If there is anything about which transportation and shipping men are unanimous, it is on the necessity for far greater efficiency in equipment utilization —but on the part of trucks as well as the railroads; and real economy, not just railroading for the production of spectacular, though meaningless, statistics. The ODT deserves helpful collaboration because it has had the courage to tackle this vital and grievously difficult job. But it is hard to collaborate with a fellow who already knows all the answers without outside assistance; and who believes, not only that Rome *can* be built in a day, but that it *is going* to be.

●

TRAIN ACCIDENTS UP: In February there were 1,005 train accidents—approximately 61 per cent more than last year. Nobody can feel complacent about such an increase. On the other hand, a larger number of mishaps is not to be wondered at, when it is considered that *opportunities* for accidents rise in much greater ratio than the increase in the number of trains. For instance, take a branch line on which only one round-trip train runs—and you have only a derailment hazard. Put another train on that line and you not only double the derailment hazard, but you take on the potentiality of two daily collisions. It is *natural* that accidents should increase in greater ratio than traffic, just as it is that they should fall off more than traffic, when the latter subsides.

●

WAR MAINT. OF TRACK: Machinery developed in highway building can work wonders in saving money, men and time in track maintenance. Specific information as to what and how is revealed in a paper by Chief Engineer Perlman of the Rio Grande, published in these pages. Seems to your non-technical scout that this is the kind of information that will come in handy at a time like now, with material and men shy and heavy traffic calling for top-notch track. But this isn't all Mr. Perlman reveals that is helpful and exciting. He tells some things about his road's technical research, especially that having to do with the track structure. Any design or method has to prove itself in the lab or in critical service tests, to acquire "economic security" on the Rio Grande.

●

JAPS AS SECTION BOSSES: Maybe you knew all about Jap boys, graduated from American engineering schools, having had section bossing jobs in the West during the 'Twenties—but it was news to your attention-caller when Mr. Perlman made the fact known in his paper. These fellows had a specialty of bidding in jobs where there were plenty of tunnels, bridges, canyons—and they elaborately sketched everything. Back in those days these crafty vermin flattered us into showing all we had, by making us believe what they were doing was getting familiar with the results of our superior brains, so they could imitate us at home. And all the time what they were really doing was mapping everything down to the track spikes.

●

OFF-LINE OFFICES OK: Some of the fellows in off-line traffic offices have been worrying for fear the ODT might blot them out. Mr. Eastman has written to the roads that he has no such present intention. On the contrary, the ODT director believes these offices can be of considerable value, "if used as service and expediting agencies." It might be a good time, too—as other industries are doing—to use some of the spare time that salesmen now have to teach them more about the business; knowledge which will come in handy when strenuous competition revives.

●

AUSTRALIA'S GAGES: There have been many maps of Australia published recently in the popular press—most of them showing that continent's railroads. But none of them has revealed our ally's fundamental transportation difficulty, i. e., the diversity of its railway gages—necessitating several trans-shipments in any real long haul. A map herein makes this clear. Which shows one of the things which happens when economics is subordinated to politics in developing transportation.

"ALL-OUT" PRODUCTION?: A lot of unthinking people in this country believe that transportation capacity, like political freedom, is a gift of nature and doesn't require effort or sacrifice. Some of these dullards are on WPB, as witness the miserly allotments they think they are going to get away with for railroad equipment during the balance of the year. Even a magician has to have a hat before he can pull a rabbit out of it. Airplane parts, guns, soldiers and minimum civilian supplies need cars to ride in and engines to pull the cars—else "all out" production will just be for storage.

●

EASTMAN TELLS THEM: The railroads are not publicly protesting, so far as we have heard, at the puny tools which the WPB proposes to give them to do the world's biggest transportation job. But ODT Director Eastman pulls no punches in letting his candid opinion be known (see news pages for details). Mr. Eastman ought to be on WPB—and your observer's prediction is that those fellows will continue to fumble their transportation function until either Eastman or some other equally-competent transportation man is made a board member.

●

JUSTICE BY EAR: Over in the news pages herein we print a report of a speech by Wayne Morse of the War Labor Board, defining the "policy" of that board in settling labor disputes which may rise during the war. Maybe your reporter is just dumb, but he was unable to lay his hand on any principle in the Dean's speech which would give a litigant before the board a hint as to the probable outcome of his case. It is this kind of uncertainty, of course, which breeds disputes. The Dean won't have any truck with "precedent." What the board is going to do is apply "flexible policies and procedures."

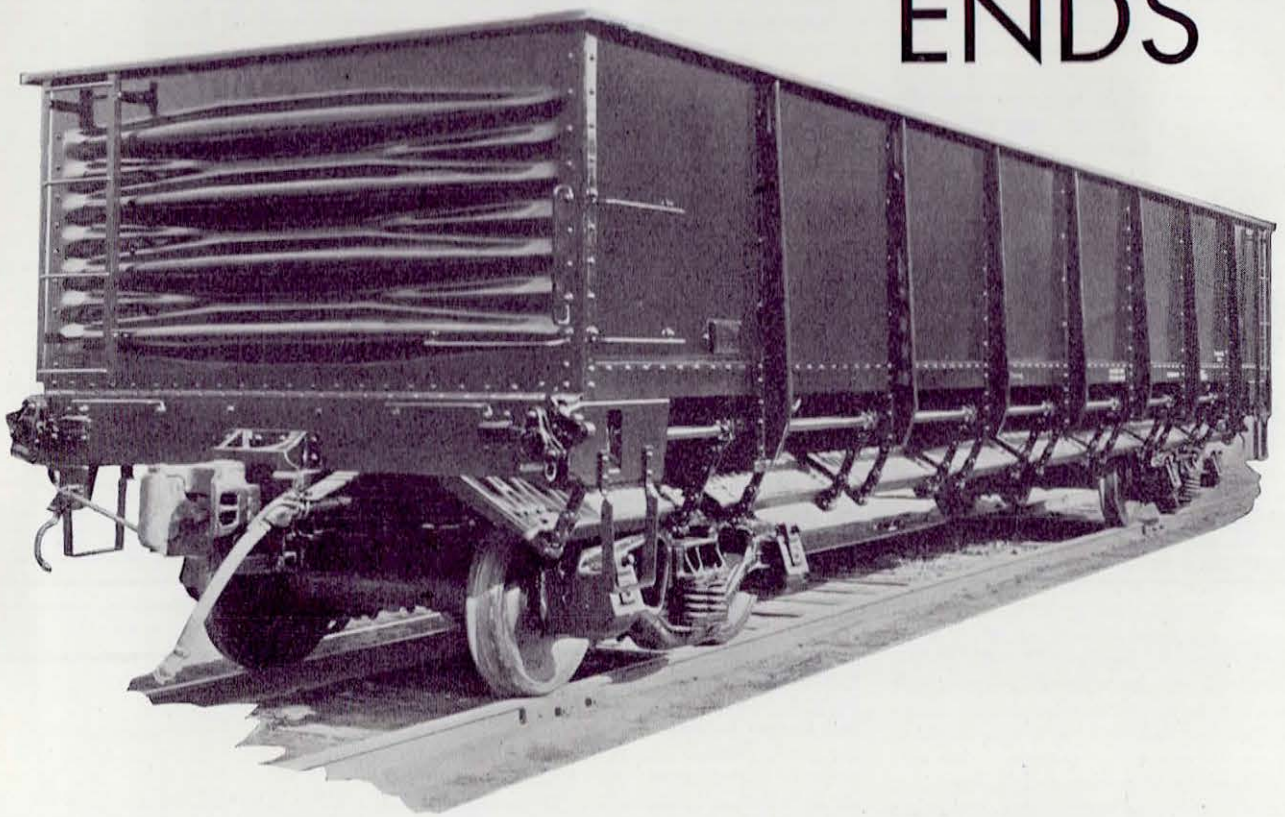
●

OPA GETS A NO: The railroads have politely denied the spectacular and officious demand (made on March 13) by the Office of Price Administration, that they forego the recent freight rate increases. They painstakingly explain, in ABC terms—which ought to be understandable even to an OPA schoolboy—why they can't see going along with the OPA policy of attacking effects instead of causes. The fact of the matter is that the Price Administration is staffed by a lot of *political* economists (with the accent just where we have placed it). They sat around complacently and did nothing while wages skyrocketed. Now that the inevitable result of their academic timidity has occurred, they run around in panic trying to find a goat.

●

N. H. DIESEL-ELECTRICS: Intensive use characterizes the operation of freight-and-passenger Diesel-electric locomotives which the New Haven is placing in operation between Boston and New Haven. An illustrated article herein describes these locomotives and shows how they are scheduled to secure maximum daily mileage.

DREADNAUGHT ENDS



CUSHION SHOCKS DUE TO SHIFTING LOADS AND PROTECT THE SUPERSTRUCTURE

PROVIDE UNIFORM STRENGTH OVER THE ENTIRE SURFACE

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...with Good Intentions

We have so far been unable to locate anybody with an adequate knowledge of the circumstances who opposes Mr. Eastman's objective in issuing ODT General Order No. 1. It has been almost as hard to find anybody who believes that the order, as it stands, will achieve that objective.

As all transportation people know, there are two schools of thought on the proper method to secure greater efficiency in l. c. l. handling, viz., those who look with a friendly eye on pooling or forwarder operations, and the "let's do it ourselves" group. Adherents to the former opinion, naturally, are somewhat more favorably inclined toward the order than the latter. But there are some aspects of this drastic command which cannot be viewed without deep concern by either group.

The blight on the attainment of over-all efficiency in every large organization is the over-zealous specialist, who seeks to orient the entire enterprise to the attainment of spectacular ratios in his own department. It is the function of the top executive in an organization to quell the zeal of departmental specialists, when they may reasonably be suspected of a tendency to sacrifice the good of the whole to a spectacular display for a part. Mr. Eastman has a similar duty toward the entire transportation industry—that is to promote its *over-all* efficiency in contributing to the war effort.

Observance of a minimum of 10 tons would promote efficient equipment utilization in many cases and detract from it in others (for example where there is a large normal outbound movement of empty equipment). The General Order itself recognizes the inapplicability of these minima where empty refrigerators are involved. There are hundreds of local situations where other classes of cars are moving empty outbound, and which would promote equipment economy if even 1,000-lb. loads could be found for them. How, for instance, about the heavy movement of empty cars out of the Los Angeles area?

Better Uses for Supervisors' Time

Unless there is to be a multitude of exceptions to this order—with all the conferring, wiring, letter-writing and other waste of precious supervisory time which these entail—the 10-ton rule will produce a spectacular figure of average l. c. l. loads per car—but with a net result probably contributing more to Mr. Turney's self-satisfaction than to genuine over-all transportation efficiency for the war effort.

Mr. Turney's originality and energy must be admired. There are many who may feel somewhat less enthusiasm for the degree to which he—so able a partisan in peace-time—has succeeded in realizing that his client is now Uncle Sam. His order would require a railroad to divert 9 tons of merchandise to a truck line for a 100-mile haul, and pay the trucker 36 cents per truck-mile for the service. In the event that a box car were "going that way empty anyhow," Mr. Turney would create 200 unnecessary truck-miles, with no saving in car-miles; inadvertently no doubt, he would deplete railroad earnings and augment those of the trucks.

Questionable Divisions

The prescribed divisions will, in many cases, leave the railroads holding the bag even for their out-of-pocket expense. The rigid restrictions on railroads, with no similar control of trucks, will mean that the shipper who wants to be sure of getting his shipment through on time will prefer truck to rail transportation. The shipping habit thus engendered will be very convenient for truck revenues—especially after the war is over—but it may do just the opposite of conserving war-time transportation.

General Order No. 1 does not attempt to curb long-hauls by trucks (which is a form of transportation waste which, because of the rubber shortage, stands in even more urgent need of correction than light-loading and short-hauling by the railroads).

The foregoing observations are not intended to reflect on the sincerity of purpose either of Mr. Turney or anybody else in the ODT, nor on the necessity, both for drastically increasing the intensity of utilization of l. c. l. equipment—and more regard for economy in the division of traffic between rail and highway. The very fact that the ODT has set out, however unsteadily, on this path entitles it to the prayerful good wishes of the whole transportation and shipping community.

But the problem is too big for one man to try to solve all by himself. Calling in a few transportation and shipping people for a hurried *pro forma* "conference"—and then changing only a couple of commas in the original order—scarcely constitutes enlisting the brains of the industry. A. W. Vogtle, who must have as accurate a "feel" of the national shippers' pulse as any man in the country, has urged that the effective date of the mandatory order be postponed till fall—to see what can be accomplished by co-operative action in the interim. What well-informed transportation man would care to deny the wisdom of such counsel?

Hours and Wages for Continuous Operation

In connection with the heated discussion of the 40-hour week in industry, attention has been directed to the fact that, generally speaking, there is no such limitation on the hours of work on the railroads—where continuous operation of the kind urged upon the war industries has always prevailed. Overtime at penalty rates on the railroads, in the branches where operations are continuous (such, for instance, as in train service) is paid only where *daily* hours are excessive. There is no distinction in wage rates among Sundays, holidays, and other days of the week. In the shops, and other departments where operations are, as a rule, suspended on Sundays and certain recognized holidays, penalty overtime is paid when employees are called to duty on days of normal shut-down.

When 7-Day Operation Is Necessary, Why Penalize It?

The goal which many of the war industries are aiming at appears to be that which has always obtained in train service on the railroads—namely continuous operation, 24 hours a day and seven days a week. Where it is necessary for an industry to work on this basis, the logic of the case would seem to call for arrangements which will discourage excessive hours of labor in any one day; and thereafter to look to local adjustments to see to it that each man has at least one day of rest in seven.

That railroad train and engine service employees have not suffered, either from unduly long hours or inadequate wages, from an arrangement which does not automatically award them penalty overtime after 40 hours, or penalize Sunday and holiday work, is amply borne out by the figures in the accompanying table, which shows wages and hours of labor in December, 1941. The only classes of employees who worked fairly long hours at "straight" time (and who also earned substantial overtime at penalty rates) are seen to be those operating local freight trains. Crews of passenger trains and through freight trains worked comparatively short weekly hours, and their overtime earnings at penalty rates were not substantial.

The table discloses, for example, that passenger engineers worked, on the average only 33.4 hours per week "straight time"—and of their average weekly earnings totaling $82.65, only $5.85 was penalty overtime (representing, probably, less than two hours of actual work). These employees, therefore, averaged, probably, very little more than 35 hours of actual service, which, for compensation totaling $82.65, cannot be considered otherwise than favorable—both as to hours and wages. Or consider through freight conductors. Their weekly "straight time" hours in December, 1941, averaged 40.4. They received, on the average, $7.70 in penalty overtime (representing, probably, about 3⅔ hours of actual service). For service hours totaling about 44 in a week, they received $64.30 in compensation. Such railroad experience seems clearly to indicate that it is possible for an industry which operates 24 hours a day and 7 days a week to deal most generously with its employees, both as to hours and wages—without the arbitrary payment of penalty overtime for Sunday and holiday work, or for work in excess of 40 hours weekly.

Weekly Hours and Earnings of Train and Engine Service Employees in December, 1941

	Avg. Weekly Hrs. Straight Time	Avg. Straight Time Hourly Wage	Avg. Straight Time Weekly Earnings	Avg. Overtime Earnings per Week	Avg. Total Weekly Compensation
Passenger Conductors	38.60	$1.82	$70.25	$4.95	$75.20
Through Freight Conductors	40.40	1.40	56.60	7.70	64.30
Local Freight Conductors	52.37	1.16	60.75	16.00	76.75
Passenger Baggagemen	38.14	1.41	53.80	3.20	57.00
Passenger Brakemen	36.11	1.41	50.95	3.65	54.60
Through Freight Brakemen	34.98	1.15	40.20	5.65	45.85
Local Freight Brakemen	47.40	.95	45.05	12.65	57.70
Passenger Engineers	33.40	2.30	76.80	5.85	82.65
Through Freight Engineers	37.92	1.61	61.00	9.25	70.25
Local Freight Engineers	50.79	1.33	67.50	20.30	87.80
Passenger Firemen	31.15	1.93	60.10	4.55	64.65
Through Freight Firemen	33.63	1.28	43.05	6.10	49.15
Local Freight Firemen	47.40	1.04	49.25	14.70	63.95

NOTE: These averages have been obtained by dividing the totals of hours and compensation for all employees in each class, by the number of employees actually working at mid-month; monthly figures expressed in weekly equivalents by dividing by 4.43. The resulting averages thereby reflect the results of full-time employment, and do not take into account hours or earnings as distorted by partial absenteeism.

Railroads Not Free From Arbitrary Charges

It would not be accurate to assume from these figures, however, that railroad wages do not include payments to employees at burdensome rates. Train and engine service employees are paid, either by the mile or the hour "whichever exceeds." For example, a freight conductor in through freight service is paid (in the East and Southeast) $7.82 for 100 miles or 8 hours "whichever exceeds." If the train on which such an employee were working traveled 100 miles in exactly 8 hours, the employee's compensation would be at the approximate rate of 98 cents per hour. But the average freight train travels much faster than that, so, as the table discloses, the actual straight time hourly earn-

ings of through freight conductors in December were $1.40—or more than 40 per cent above the presumptive hourly rate. As train speeds have increased in recent years (freight trains traveled 25 per cent faster in 1941 than in 1929), train and engine service employees have earned their "day's" wages in proportionately less hours of work.

This higher train speed is the result, not of notably greater skill or harder work on the part of train service employees—but, rather, of large investments of new capital in better track, superior rolling stock, improved signals; and in constantly improving managerial control. In other industries, where such "piece work" is the rule—an improvement in machines is usually followed by an increase in the output required of each employee per dollar of compensation. This has not been the case on the railroads—so the benefits flowing from higher train speeds have, to a large extent, been retained by the employees, rather than shared with others who have contributed toward making them possible.

Then, too, there are the so-called "full crew" laws in train and engine service (arbitrarily requiring the employment of supernumerary employees) and the "featherbed rules" (forbidding, for example, in some instances, crews of road trains to do switching at local stations—thereby requiring the provision of a local switch engine and crew, drawing eight hours' wages where, perhaps, there may be only two hours of work to do).

When these rules and the method of compensation are taken into account, the railroad industry cannot claim that it is free from costs—which it must perforce reflect in charges to its customers—which are *closely parallel in character* to the penalty rates for weekly hours over 40 in war industries, which are adding unreasonably to the cost of the munitions of war which the American taxpayers are buying. On the other hand, it may at least be said that, where excessive payments are exacted by the railway unions, they do not levy them in a manner to penalize the industry because it does not close down a couple of days a week.

If the country for political reasons must tolerate being shaken down by the unions, these latter might at least be asked to change the character of the tribute they levy, so as not to discourage continuous operation of the munitions industries.

Block System for Medium Traffic Lines

Within recent months, following the occurrence of collisions between trains, the Interstate Commerce Commission has issued orders directing several railroads to show cause why a block system should not be installed. These orders refer specifically to a "block signal system," and according to a strict interpretation of the wording, a railroad is permitted to choose between automatic block and manual block. From the order, it may be assumed that if automatic block is provided for protection, the practice of authorizing train movements by time-table and orders may be continued. However, if the railroad chooses to install manual block, the signaling and the method for authorizing train movements are specified in the order. The orders make no reference to centralized traffic control; however, the Commission has heretofore prescribed rules for C. T. C., and it may be assumed that the installation of C. T. C. would be approved.

What Is a "Block"?

Assuming that one of these railroads is considering manual block, various questions may be raised concerning the meaning to be applied to different terms, such as "a block." In the final analysis, however, on single track, a manual block is the section of track between two block stations, over which train movements are authorized by signals at the block stations at the two ends of the block. Under this interpretation of the term "block," meets between opposing trains at intermediate sidings at which no manual block stations are in service can be arranged only by one of the trains clearing at the intermediate siding before the other train is allowed to enter the block. The use of unattended "blind sidings" for meets, as is now the practice on some roads, would seem to be unacceptable to the Commission, and the establishment of a full-time manual block office at each siding will involve such a large increase in operating expenses that the installation of automatic block or centralized traffic control can readily be justified on a line which handles any considerable amount of traffic.

The installation of automatic block signaling would comply with the order of the Commission, but such a system would necessitate continuance of the practice of authorizing train movements by time-tables and train orders. On the other hand, the installation of centralized traffic control, including semi-automatic signals for authorizing train movements, has the advantage of saving considerable train time because of the delays inherent in time-table and train order operation, regardless of whether automatic block is provided.

20-30 Daily Trains Justify Complete C.T.C.

On a railroad which has a traffic ranging from 20 to 30 or more trains a day over a single track line, complete centralized traffic control, including power switches and the standard arrangement of signals, is justified and should be installed. During the 30-day period preceding January 19, one of the roads which has been ordered to show cause why "an adequate block system" should not be installed, handled an average of 17.4 movements daily over the territory involved in the accident. Undoubtedly this average is high, because of the heavy traffic now being handled, and in more normal times might approximate eight to ten train movements daily.

The problem, therefore, as applied to this medium

volume of traffic, is to plan a semi-automatic signaling arrangement and controls which can be installed at a cost which is comparable with or not much in excess of the cost for complete absolute permissive automatic block signaling. Much thought has been given to this problem during the last two years. For illustration, the Chicago, Milwaukee, St. Paul & Pacific installed semi-automatic signaling, without power switches, on 60 miles of single track between Manilla, Iowa, and Council Bluffs, at a cost of only a few hundred dollars more per mile than for automatic signaling alone. Another feature of the Milwaukee installation is the equipping of only certain sidings with complete semi-automatic signaling for the operation of through trains, whereas the short sidings were equipped with semi-automatic signals for leave-siding moves only. Furthermore, the over-all station-to-station blocks extend between the major sidings.

In brief, this practice reduced the number of signals required and effected certain economies in control apparatus.

Since the Milwaukee project was planned, attention has been called to methods for the further simplification of semi-automatic signaling, as for example, on page 335 of the *Railway Age* for August 30, 1941. More recently, schemes have been developed which provide all the local field controls between sidings, by the use of track circuits, thus eliminating line wires for such purposes. Furthermore, one of these schemes utilizes normally de-energized track circuits, thus obviating the use of a line circuit for power distribution to intermediate signals and track circuits. The saving effected by the reduction in line wires is about $400 per mile, as compared with the Milwaukee project.

Thus, if these new simplified signaling arrangements and new circuit schemes are incorporated in a project, the cost approximates that for complete automatic block signaling, the variations depending on the number of sidings and other local conditions. Therefore, where increased track capacity is required as a part of the war program, as explained in detail in an editorial in the issue of April 4, the logical procedure is to plan for C. T. C., and to furnish the materials on a priority basis.

Substitute Materials

The Association of American Railroads, with full appreciation of the opportunity to co-operate with the War Production Board, was quick to recognize the great extent and value of the assistance the railroads could render in our national war production program by attempting to find substitutes for those materials, the supply of which is not adequate to cover both war and civilian requirements. Mechanical department officers, generally, responded promptly to the requests for co-operation and went forward with commendable initiative and vigor in setting up conservation and replacement programs which extend even to the most insignificant applications of scarce materials. A few ounces saved on one piece of equipment may seem trivial but it bulks large when multiplied by a considerable number of units.

A large amount of copper is used on a modern steam locomotive. Analyzed and listed in detail, down to the smallest part on all classes of mechanical equipment, it became apparent almost immediately that while it would not be an easy task, the copper alloy parts could in a number of places be replaced by materials which are more readily available. The same thing proved to be true of rubber, special steels, tin, nickel, and other strategic and source materials.

Typical of the manner in which the problem is being tackled is the program on one large railroad. Promptly upon the call to action by President Pelley of the A. A. R. early last December, the mechanical department officers of that railroad, after making some preliminary surveys, went into a huddle. It was found that known savings could be made by the mechanical department, based on the requirements for the last quarter of 1941, of well over half a million pounds of copper. This was based on the use of modified designs of journal bearings on freight and passenger cars, locomotives and tenders; by substituting gun iron with babbitt inserts on crosshead shoes; by a substantial reduction in the use of sheet copper on cars and locomotives; discontinuance of copper bearing steel sheets on cars and locomotives; substitution whenever possible of iron or steel for brass and bronze bar stocks; and through the substitution of iron, steel or other suitable and less-acutely-scarce materials for such parts as firebox support plates, cab window and windshield frames, and tank valve seats.

It is estimated that a 50 per cent further saving in copper may be made by substitutes that are now in process of being tested and tried out.

Shortly after the conference detailed instructions were issued over the system as to how each of the suggestions was to be followed up. A round-up made recently indicated the progress that was being made and it was quite considerable. Other scarce materials are being treated in like manner; this is especially true of rubber, alloy steels, tin, etc.

Difficult and baffling problems are being encountered. Substitutes themselves, which at first seemed readily available, may fade out of the picture. Redesigning parts to use substitute materials sometimes interjects problems which are difficult or seemingly impossible of solution without too much sacrifice in other respects. Nevertheless the program is being pressed forward vigorously, and real and substantial results are being achieved.

The "box," dealing with questions of importance from a traffic standpoint, usually appearing in this space will be found on page 754

The Army Should Have Available An Experienced Group of Fully Equipped Track and Bridge Men to Take Care of Any Construction and Emergencies That Can Be Expected in Combat Areas and Defense Zones

Research and Machines — Key to Track Maintenance in War*

A plan to conserve man power and materials and to strengthen the railroads' competitive position — Also a warning of railroad sabotage and a plan for combating it

By A. E. Perlman

Chief Engineer, Denver & Rio Grande Western

TODAY, men and materials are being rigidly rationed. Each day they become more difficult to obtain. And daily as the war program gets under way, the load upon our transportation facilities increases. It is now vital that our railways be fully and adequately maintained. We cannot fail our nation at this time.

Difficult going has never made the American railroader slow his pace. During the depression years of the early 'thirties, he kept the railroads safe and efficient. He learned new ways of maintaining his properties which saved hundreds of millions of dollars for the railroads. And today—to help win the war—we must conserve man power and materials as never before.

Modern Machines and Research

This can best be done through the use of modern machinery and intensive research. For modern machinery can help us increase our production per man-hour, and research will permit us to lengthen the life of the materials we now use. It will aid us to find new designs which will reduce the amount of material necessary, or help us find new materials more adaptable to our use.

Fatigue failures each year take a large toll of our materials. Their elimination would substantially reduce our requirements for new materials. The four major causes of fatigue failures are defects in design, fabrication, metallurgy and handling in service, and, with the research facilities now available, great progress is being made in their elimination. A few specific examples may better illustrate my point.

In 1936, we ordered for test a few hundred special joint bars, and before long noticed several fatigue failures developing. To trace them from their earliest inception, we used a portable Magnaflux, which indicated incipient fractures before they could be detected by eye. We went beyond the test track and examined several miles of track in which our standard bars had been placed only eight months before. Eighty per cent of these standard bars tested with the Magnaflux showed signs of fatigue failure. By immediately grinding out the cracks before they had the opportunity to progress to a point of failure or to where the bars could not be reformed, it was possible for us to retain them all in service.

We were very much puzzled and began for the first time the photo-elastic studies which were to be of such great help in the design of much of our equipment. These

* An address presented before the Metropolitan Maintenance of Way Club, New York.

studies showed that even by the normal tightening of the bolt, the design of the bar was such that stresses concentrated at a knife edge along the top and bottom. These stresses were greatly increased when live loads were applied to the rail. They were shown to be concentrated at exactly the points in the bars where cracks were occurring in the field.

After showing these results to some of our neighboring railroads, they canvassed their properties and found the same failures to be occurring. The manufacturer of the bar immediately took steps to rectify the design. In its investigation, the company studied the results obtained from the photo-elastic work in our laboratory, and then equipped a laboratory of its own.

Our own work has opened new horizons to us and we hope to develop a bar which will give the greatest support to the joint with the minimum amount of material. We think that in the photo-elastic method we have a short cut for solving the perplexing questions of length, spacing of bolt holes, and the many other problems in rail-splice design which for years have been the subject of studies by trial and error methods.

Problems in Rail Design

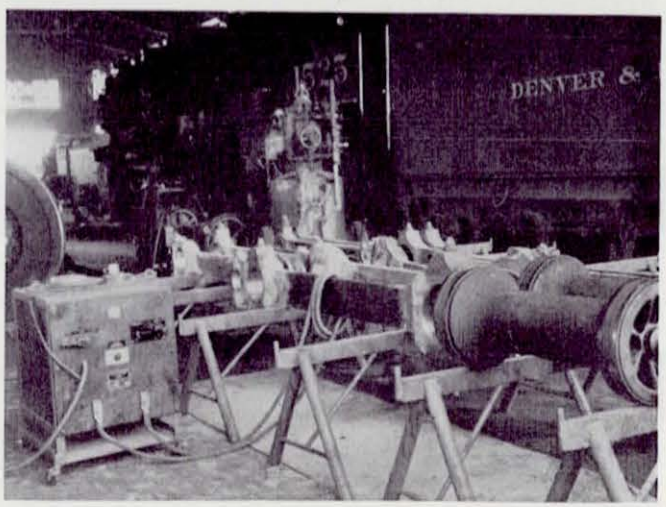
Photo-elastic methods are also proving helpful in the solution of our problems in rail design. About two years ago our roadmasters reported what appeared to us to be an unusually large number of split webs in 112-lb. R. E. section rail, which had been in the track less than a year. We examined a number of these rails with the Magnaflux and found failures occurring along the neutral axis in the web of the rail, parallel to the base, which, after progressing some distance parallel to the base, turned either up into the head or down into the base. They were particularly bad failures because they could not be detected by the rail detector car or by the block signals. These failures occurred on both tangent track and curves. They had no recurring intervals in their spacing; hence, it was evident that the failures could not be attributed to defective equipment.

The cant of our tie plates was 1 in 40, and the tread of the wheels was 1 in 20. We noticed that the edges of the balls of the rails on the gage side were shiny from carrying a large proportion of the load, leading us to believe that there were large eccentric vertical loads on the rails, since they had not yet worn down to the contour of the wheel. Photo-elastic studies in the laboratory showed that, with these eccentric vertical loads, the webs of the rails were being over-stressed at the points where failures were occurring. With the assistance of the late Professor A. N. Talbot and G. M. Magee, research engineer of the Association of American Railroads, strip gages were used in the field to determine the stresses encountered under actual load conditions, and they checked very closely with our findings in the laboratory.

A New Rail Section?

To overcome these failures, we have increased the thickness of the web of our 112-lb. rail—so that we now have a 115-lb. section. This, however, is merely a temporary measure, for the photo-elastic studies showed a curious result. We had always believed that the web should be thicker near the bottom than near the top, but our studies in the laboratory showed that just the opposite should be true. Back in 1931, Messrs. Timoshenko and Langer,* who made an analysis of stresses in railroad track for the Westinghouse laboratories, reached the same conclusions through mathematical computations which they had made. But railroad engineers, so long accustomed to present rail design, did not take these calculations seriously. We now feel so certain of these calculations that we are planning a new design of rail which should increase its strength and save material. We had intended rolling some of this new section for test, but the war makes it imperative that rail sections be standardized until after the conflict is over. At that time, we will undoubtedly see a rail section appear in which the web is thinner toward the base than it is above the neutral axis.

Fatigue failures due to improper fabrication can, to a large extent, be eliminated. We have found in the laboratory that rough edges or sharp corners are stress raisers. At one time our railroad used a 1-in. rod for spring switches. Since breaks occurred through the bolt holes we went to 1¼-in. rods. The rods kept right on breaking. Laboratory examinations showed that every one of the fatigue failures began at a sharp corner that had been left when the holes were drilled. We now make certain that the sharp edges are smoothed properly before the rod is put into service, with the result that these failures have ceased.



Research and Magnaflux Testing On the D. & R. G. W. Have Done Much to Detect Defective Equipment and to Bring About Improved Materials and Designs

Unbelievable Results

In the conservation of man power, modern equipment can accomplish almost unbelievable results. On the road with which I am connected the purchase of $85,000 worth of modern off-track crawler-type equipment five years ago has accomplished a saving of nearly three-quarters of a million dollars annually in our operations. When this is translated into man-hours—for the saving was all in labor—it can readily be seen what can still be accomplished in this field.

And yet the savings were not confined to better maintenance performance. The elimination of work trains meant that a number of delays to revenue trains were eliminated. Dispatchers could concentrate on dispatching regular trains instead of putting out orders to work trains. Also, in cases of traffic interruptions, it is no longer necessary for us to restore the line by working only from both ends. The operations can be carried on at as many intermediate points as can be worked to good advantage by available men and equipment.

* Stephon Timoshenko, professor of theoretical and applied mechanics, Stanford University, and B. F. Langer, research engineer, Westinghouse Electric & Manufacturing Co.

The Extensive Army Camp and Ordnance Plant Construction About the Country Could Be Used to Large Advantage As a Training Grounds for Army Railway Construction Troops

As an example, last year cloudbursts brought down 19 extensive wash-ins in six miles in Glenwood canyon. A few years ago, before we bought the crawler-type equipment, it would have been necessary to open the line by using a steam ditcher at each end. In the recent instance, using bulldozers at various points throughout the cloudburst area, the line was opened in less than a fourth the time that would have been required with the older type of equipment. Also, these same machines, equipped with winches, can work quickly and effectively in most situations involving traffic interruptions caused by derailments. Moreover, if such an expedient is found necessary, they can build a shoo-fly in record time so that traffic can be resumed long before it might be possible to clear a wreck.

In programming our maintenance and improvement projects for the year, we schedule the work so that these machines will be available at strategic locations during the cloudburst season.

Surface Only Scratched

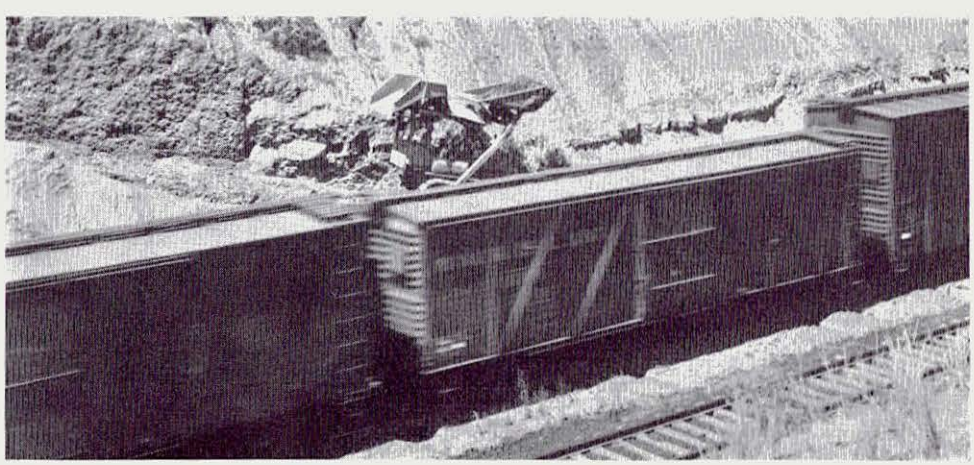
While we have only scratched the surface in our studies concerning modern materials and machines, the results obtained have been highly gratifying. And never in the past thirty years on our railroad has the ratio for ordinary maintenance been as low as during the last two years, in spite of the fact that during the depression years maintenance was sharply curtailed, while during the years in question we maintained our property fully and adequately. And by "fully and adequately" I mean that we have done more than merely raising low joints and lining track, for we must take into account the factor of obsolescence and keep pace with the rapidly expanding forms of transportation in other fields when planning our work for the year.

Modern Highways vs. Ancient Railways

The annual budgets of the Public Roads Administration and the various state highway authorities include more than mere items for the patching up of worn surface coats. Each year substantial items are included for shortening distances and eliminating grades and curvature. Today trucks and busses can make better time between many important western centers than passenger or freight trains can. This is difficult for most of us to realize. It was for me, for the text books on transportation had taught me that the railroad is the prime mover of heavy bulk commodities for distances of over 100 miles. And there appeared no reason to doubt the text books. Therefore, we were told, let the trucks take the l. c. l. from town to town; we would still have the coal and the grain and the lumber.

Recently I met a "Pearl Harbor" of my own. One of the defense agencies asked me to study the method recommended for transporting ore from a mine to the processing plant over 300 miles away. A railroad was in operation for 100 miles of that distance. And it was planned to rehabilitate an old line of railroad, which had been abandoned, for all but 30 miles of the remaining distance in order to haul the ore.

A study of the line that was in operation showed the present cost per net ton-mile to be nearly four cents. This was due primarily to four mountain grades, heavy curvature, light rail and small power. Taking into account the fixed charges in connection with the rehabilitation of the remainder of the line, the cost of hauling



Modern Off-Track Work Equipment Obviates the Need for Work Trains and Avoids Interference with Traffic

the ore over the 300 miles by rail would have been $6.30 per ton, the transportation cost alone being $4.85 per ton, with the remainder consisting of fixed charges.

An entirely new and modern railroad could have been built, over which it would have been possible to haul the ore at a transportation cost of $3.00 per ton. But, considering the traffic to be handled, the fixed charges would have nearly doubled this cost. And this is where I received a jolt: A contract trucker made a bid of less than $5 per ton to haul the ore. Thus the rude awakening: For it taught me that a line built to standards 40 years old could not compete in transportation costs with modern Diesel trucks operated over recently-built highways. It gave, further, a clear indication that, even if a modern railroad were to be built, it could not compete with modern trucks operating on highways built without charge to them by the government, unless the density of traffic was great enough to overcome the handicaps imposed by the fixed charges involved in the construction of the railroad line.

Perhaps the complacency which I suddenly lost had another effect. It made me think that perhaps our government and our armed forces do not yet realize the full importance of the railroads or of the railroad maintenance man in the winning of the war. For while the railroads are classified as a vital industry, they are not classified by the government as a defense industry. The ODT has not even been given a place on the WPB.

A few days ago I was privileged to talk to an American who had lived in Honolulu for thirteen years; who was in Hawaii on December 7. He said, "We had no fears on the night of December 6. We were protected by a large squadron of the Pacific fleet and no one was alarmed on Sunday morning when the bombings were begun. We thought them very realistic maneuvers. But the Japanese knew where to strike—which hangars were full of planes and which were empty. Our Japanese milkman had a portable transmitter in his wagon and was informing enemy planes where to strike. Other Japanese whom we had trusted for years were also found giving assistance to the enemy." "And," the speaker continued, "don't think it won't happen here in the industrial centers of the United States. They know where to strike just as they did in Hawaii."

Japanese Foremen—and Spies

The conversation brought back to me memories of the 'twenties when I worked in the Northwest. In those days we had Japanese section foremen—engineering graduates—who bid in sections on which were located tunnels, high bridges or narrow canyons. They were often seen making sketches, and would return to Japan frequently. We knew then, and know now, that they were here to obtain information for their government. And we know, and they know, how easily they could disrupt our transport facilities.

At least once or twice during their lifetimes most railroad men have seen major catastrophies strike their roads, and know what it means, even at a time when materials and machines are plentiful, to re-open the line. I have had a number of such experiences on three railroads, and because the type of pile drivers and work equipment used by these roads required that the work be started at both ends and completed in the middle, it was necessary, in one instance, to wait two weeks at certain portions of a washed-out main line before a pile driver could be obtained.

For this reason, it has been my hope that when this conflict started the Army Engineers would have available an experienced group of track and bridge men equipped with mobile crawler-type bulldozers, draglines, pile drivers, rail layers, and power bridge tools—an organization which could put to shame that of the German army which daily repaired and converted to German gage 15 miles of Russian railroad. I hoped that they would have on hand an emergency stock of material at strategic locations which would include, say, 90-ft. piling. Such piling, which is not carried in stock by most railroads, could be utilized if a particularly important steel structure were put out of commission.

No Construction Troops

You can well imagine, then, my great disappointment when reading these words in an address* delivered before the American Society of Military Engineers on November 12, 1941, by Lieutenant-Colonel Lewis T. Ross, chief, Railway Section, Engineer corps. I quote:

"The manager, Military Railway service, has no *construction* troops under his direct control. New construction is carried out by army and communications zone general engineer troops. I am alone among War Department officials in believing this to be a mistake. Railway Reserve officers also disagree with me. But this is not followed in the army of any other major power. It is doubtful if trained railway construction troops will be available on call or that labor will be available in sufficient quantity. I personally see considerable advantage in forming a *nucleus*, say two general service regiments, specially trained in railway construction, under the responsible using agency, the M. R. S. To these can be attached additional construction troops as needed."

I concur fully in Colonel Ross' views, but would go even further in carrying out his aims. During the last few months the railroads have been called upon to construct hundreds of miles of track on government property at defense plants. The plea by the War Department is, "You have the men and the machinery to do the job very quickly, and time is the essence at present. Do the job for us." Why are these projects not perfect training grounds for a part of our army? Give it the materials and equipment to do the job and thereby perfect an organization which could handle reconstruction work on short notice. We then would have a full complement of the most modern machinery, with men trained in its use, and emergency material on hand which one railroad—or even two railroads—could not afford to carry. Then any major interruption to key transportation facilities could be handled quickly and effectively.

Perhaps the army has had observers in England where the motive power is light and where their wagons—or freight cars—are no heavier than our trucks, but men here who have battled floods, wash-ins, washouts, rock slides, hurricanes, and snow blockades know that it takes a fully experienced and well-equipped body of men to repair expeditiously the heavy-duty lines which American equipment necessitates. If such groups, with crawler-type bulldozers, drag-lines, shovels, pile drivers, rail layers, power bridge tools, and a stock of emergency material, were located at points where they could be quickly moved to vulnerable locations, we would be better equipped to handle with the precision of the Axis military machine the men and materiel so necessary to the winning of this war.

There is no room for complacency on the part of any one of us here. We must do our part in the war effort by keeping modern the machines, methods and materials—so vital to the task now lying before us.

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* This paper was abstracted in the *Railway Age* of January 24, 1942, page 257.

Diesel-Electrics for Freight and Passenger Service

Alco-G. E. motive-power units move both kinds of trains every day with no relief power at terminals

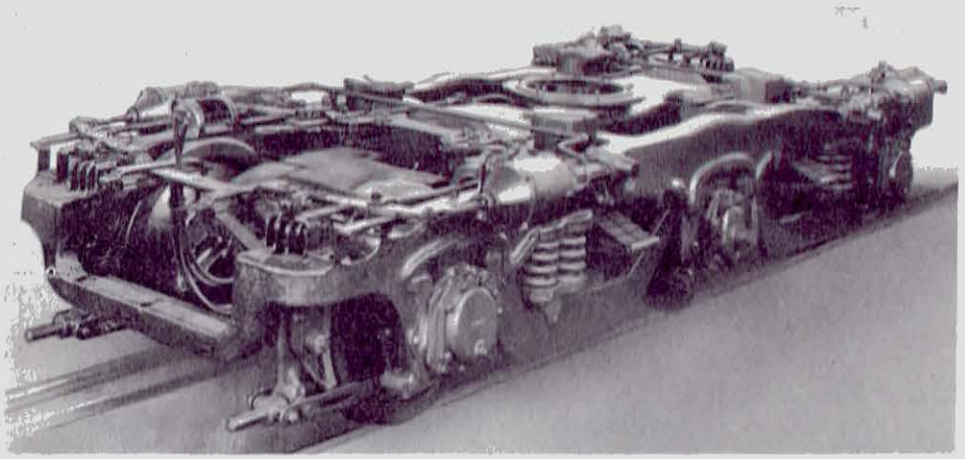
THE New York, New Haven & Hartford now has in service eight of a total of twenty 2,000-hp. Diesel-electric locomotives designed for mixed service, received on the New Haven between December, 1941, and March, 1942. Each was placed in service on the same day delivery was taken.

Enginemen of regular passenger and manifest freight trains, to which the new locomotives were assigned for their initial revenue hauls, were instructed by the road foreman of engines until qualified in their operation. As the locomotives were recently assigned, before the eighth unit was delivered, they comprised a pool of seven interchangeable 2,000-hp. units, all in through passenger and freight service between Boston, Mass., and New Haven, Conn., as single or double units, according to the size of the train.

For easy identification, we may take the seven individual locomotive units A, B, C, D, E, F and G, and follow A through the cycle.

At 8 a. m. unit A leaves South Station, Boston, on passenger train No. 7, The Murray Hill, arriving at New Haven, a distance of 157 miles, at 11:15 a. m. with stops at Providence, R. I., Westerly, Conn., New London and Saybrook. At 12:40 p. m., one hour and twenty-five minutes after the scheduled arrival at New Haven, unit A returns eastward with passenger train No. 188, the Pilgrim, arriving at Boston at 3:55 p. m., after five intermediate stops. Unit A then runs to the outbound Boston freight yard and couples on to a symbol freight train, designated NE-1, departing at 5:15 p. m., one hour and twenty minutes after arrival in passenger service, due at New Haven, Water street yard, at 10:00 p. m. One hour later, at 11:00 p. m., unit A is scheduled to leave New Haven, Water street yard, with symbol freight train HB-2, due at Boston at 3:50 a. m. On Sunday this unit covers train No. 27, the Merchants Limited, leaving Boston at 5:00 p. m., due at New Haven at 7:51 p. m., this in lieu of symbol freight train NE-1 which does not operate on Sunday.

In a similar fashion units B and C operate through Boston-New Haven service on the following trains in sequence as listed: Passenger train No. 175, The Colonial, leaving Boston at 9:00 a. m. and arriving at New Haven at 12:26 p. m., with five intermediate stops, returning on passenger train No. 14, the Bostonian, leaving New Haven at 1:30 p. m., one hour and four minutes after arrival at New Haven with train No. 175, and arrives at Boston at 4:45 p. m., with five intermediate stops. This double unit then runs to the outbound Boston freight yard and couples to a symbol freight train, designated BG-3, leaving Boston at 6:15 p. m. and arriving at Cedar Hill at 11:35 p. m. It returns on symbol freight train NE-2 leaving New Haven at 12:45 a. m., due to arrive at Boston at 6:10 a. m. where this unit lays over for servicing and again starts out on symbol freight train BH-1, The Cannonball, leaving Boston freight yard at 5:45 p. m., due at New Haven at 10:50 p. m. It leaves New Haven again on symbol freight train HB-4, leaving Cedar Hill yard at 11:30 p. m., due at Boston at 7:15 a. m. where it turns to passenger train No. 11, The Park Avenue, leaving Boston at 10:00 a. m. and arriving at New Haven at 1:10 p. m. It then returns on passenger train No. 22, The Yankee Clipper, leaving New Haven at 2:25 p. m. and arriving at Boston at 5:30 p. m. It then runs to the outbound Boston freight yard and starts out in freight service on symbol freight train BO-1, leaving Boston at 6:45 p. m. and arriving at Cedar Hill at 12:20 a. m., turning at New Haven to passenger train No. 4, the Narragansett, leaving New Haven at 3:00 a. m., due at



One of the six-Wheel Motor Trucks—The Motors Are Geared to the Outside Axles

Boston at 6:50 a. m. This unit then turns to the original cycle on train No. 175.

Likewise units D and E, and F and G, follow the same cycle. This is the normal assignment of the pool as a whole. By rotation one set of two units will be serviced at Boston each day.

While the schedules of the trains handled by the new locomotives were not revised with the introduction of the latter, performance of the schedules has been greatly improved. Officers of the road point out that regardless of the extremely short turn-around time allowed for the units, *no relief power is provided at terminals.*

Hence, all operating personnel know that schedules must be maintained or else a later train in the other direction is likely to lack a locomotive. There is no excuse for delaying a new Diesel. Dispatchers and yardmasters are expected to perform, and mechanical forces, as well, are faced with short servicing periods and can't "pray over" the new units all day. As far as the new locomotives themselves are concerned, turn-around time could be shortened even further if it were not necessary to run around the test train-control loops at each terminal.

The passenger trains which the Diesels haul are all heavy through runs between Boston and New York or Washington, D. C., and comprise as high as sixteen Pullman, coach and head-end cars. Steam locomotives on the New Haven-Boston run take water from a spout at the Providence station on a sharp curve which necessitates enginemen pulling in very slowly and "inching her to the faucet." The new locomotives permit a quick, smooth stop and show greatly increased acceleration out of the station.

In freight service the new locomotives are hauling the "hot-shots" of the railroad, all of which are timed for close connections with other railroads. While operating schedules have not been modified, the Diesels eliminate a regular coal and water stop at Midway (near New London) and have substantially reduced actual running time. This improvement is due in part to the ability of the Diesel-electric to accelerate faster than steam locomotives at slow and moderate speeds. The New Haven's "Shore Line" is characterized by numerous long curves and draw bridges which require constant speed reductions. The Diesel-electrics' quick "pick-up" helps to overcome this operating handicap.

General Characteristics of the Locomotives

The locomotives were designed and built by the American Locomotive Company in cooperation with the General Electric Company. They consist of 2,000-hp. units which are coupled for multiple-unit operation from the engineman's cab at the front of the leading unit. There are two 1,000-hp. Diesel engines in each unit, all four engines being controlled by the throttle. The new locomotives are geared to travel at a top speed of 80 m. p. h.

Each locomotive unit is carried on two six-wheel swivel-type equalized trucks. These trucks are of the General Steel Castings Corporation's design and are built with swing bolsters and one-piece frames, both of which are cast from alloy steel resulting in a light-weight truck. The trucks are identical in every respect and are equipped with 40-in. rolled steel wheels and Timken roller bearings.

The weight distribution between the three axles of each truck is quite uniform, even though the traction motors are mounted on the two outside axles and the middle axle is an idler. By this arrangement the center plate and swing bolster serve as an air passage to the motors so it is unnecessary to employ canvas or rubber boots, difficult of access, for blowing the motor.

Principal Characteristics of New Haven 2,000-Hp. Diesel-Electric Locomotives

Total continuous tractive force, lb.	50,400
Total starting tractive force, lb.	139,000
Maximum speed restriction, m.p.h.	80
Diameter of wheels, in.	40
Wheelbase, motor truck, ft.-in.	15-4
Center to center of trucks, ft.-in.	43-0
Wheelbase, on unit, ft.-in.	58-4
Wheelbase, two combined units, ft.-in.	130-8
Overall length (pilot to coupler) one unit, ft.-in.	74-3¾
Overall length, two combined units, ft.-in.	148-7½
Maximum curve, deg.	21
Width over panels, ft.-in.	9-10½
Width, maximum (over handles, etc.), ft.-in.	10-6
Height, top of rail to cab roof, ft.-in.	13-6
Height, top of rail to top of ventilators, ft.-in.	14-4
Fuel tank capacity (two tanks), gal.	2,400
Total sand capacity, cu. ft.	32
Water tank capacity (two tanks), gal.	2,050
Weight on driving axles (one unit), lb.	231,000
Weights on idler axles (one unit), lb.	115,500
Total (one unit), lb.	346,500
Total (two units), lb.	693,000

The motor-truck center plate is provided with a wear-resisting steel liner and is oil lubricated, provision being made to regulate the level of the oil so that it will not flow over into the blower passages. The center plate is also fitted with a seal to prevent entrance of dust and dirt.

The trucks are fitted with clasp brakes and four operating cylinders, the braking ratio being 75 per cent with 50 lb. pressure in the cylinder. The brakes are operated by Westinghouse schedule 8-EL brake system. Automatic slack adjusters are used on all cylinders. The

trucks are equipped with automatic sanders arranged to sand the front and back of the truck.

The truck frame is carried at four points by helical springs resting on the four equalizers. The truck bolster is likewise supported at four points by triple elliptic springs supported on spring planks which are attached to the truck frame by swing links. This creates a simple and rugged assembly which is unencumbered by intricate stabilizing devices.

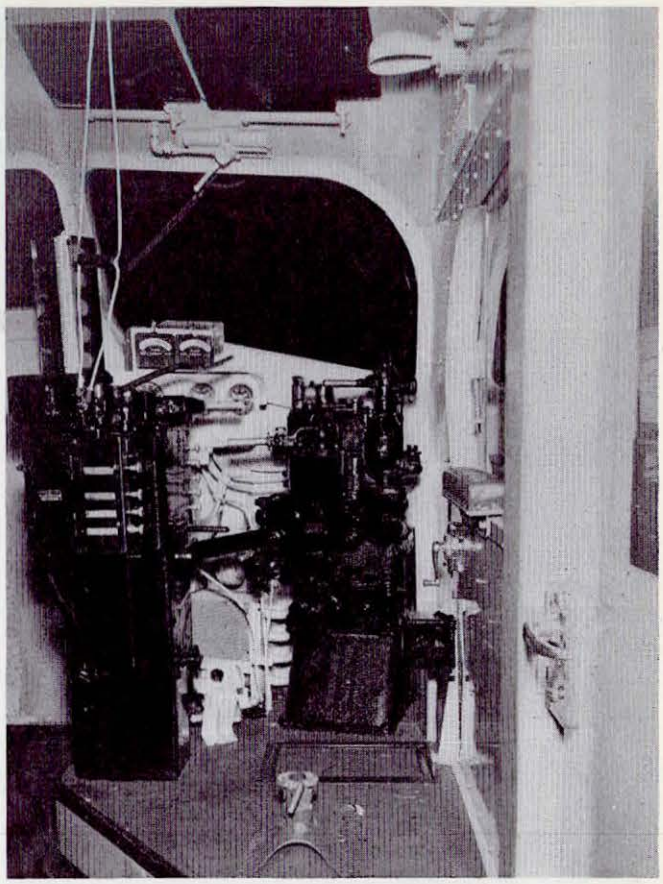
With this design the tractive force and braking power pass through the center plates of the truck into the underframe. Consequently, each end of the underframe is equipped with suitable draft gear. Standard A. A. R. couplers, exposed type, are used at both ends of each unit.

Cab and Superstructure

The cab is a truss structure in which the underframe is stiffened by two deep side trusses, one on each side of the cab. These side trusses support the roof, as well as provide a mounting structure for the side panels. The roof is equipped with hatches through which the power plant and steam generator can be removed. The side panels carry no load beyond their own weight. They are of Plymetl. Each panel is hermetically sealed by folding over at the ends of the panel and soldering the stainless outside face to the Galvannealed interior surface. Strips hold the panels in place by clamping a soft-rubber channel on their edges. Shatter-proof glass windows, several of which are hinged for ventilating purposes, are set in stainless-steel frames in the side panel.

The streamline end of each unit is made of $\frac{3}{16}$-in. steel plate, heavily braced. Within the nose thus formed are located the air-brake and train-control equipment. The headlight is built into the nose so that its lens is sealed in and the interior of the headlight is accessible through a drop door from within the nose.

The operator's compartment is located just back of the nose and is raised above the level of the engineroom floor. Both the operator and his assistant have deeply upholstered adjustable seats located on the platforms. From these they have an unobstructed view out over the cab nose. The divided front windows are of shatter-proof glass $\frac{5}{8}$ in. thick. These windows are sloping and are provided with a defrosting arrangement, windshield wipers and sun visors.



The Engineman's Station

The operator's compartment is separated from the engineroom by an insulated partition. The ceiling has been given a sound-absorbing surface and insulation. The floor is covered with battleship linoleum cemented to a heavy plywood base. This compartment is equipped with drop windows and no-draft ventilation, also with doors leading to the compartment end or nose and to the engineroom compartment, and one outside door on each side. Fin tube radiators provide steam heat for the compartment.

The control and other operating equipment in this

Two of the Freight and Passenger Diesel-Electric Locomotive Units Hauling "The Colonial" Out of South Station, Boston, Mass.

compartment is greatly simplified. The usual brake valves, and sander, bell, horn and headlight controls are present, along with a small electrical controller. This controller has but two levers; one is the reverse lever and the other controls the throttle operating mechanism for all four Diesel engines. By making the electrical equipment fully automatic, much complication was avoided in both the equipment and in the operation of the locomotive. The operator merely moves the controller handle to the notch in which he wishes to operate and the automatic control determines the motor connections. A signal lamp indicates wheel slipping.

In the cab are also signal lights for overheated engines, low lubricating-oil pressure and steam-heat generator trouble. Both units register on these lights, for, like the control, the signal wires are carried in the train-line jumpers. The operator has a speed indicator before him while his assistant has gages showing the fuel and water supply on hand.

In addition to the main control, levers and switches in the operator's cab, each Diesel engine has its own start-and-stop switch, located on the wall convenient to the engine, which permits each engine to be started or stopped independently of the other.

Power Plant

The power plants have been designed as units, each independent of the other, and are located in the cab adjacent to their respective cooling radiators. Power is derived from the American Locomotive Company, six-cylinder, four-cycle Diesel engine with 12½-in. by 13-in. cylinders, equipped with a Buchi turbo-charger (exhaust-gas driven) and delivers 1,000-hp. at 740 r. p. m. for traction purposes. Additional features of this engine are its welded steel base and the built-in air compressor. This compressor is a Westinghouse 2-CD, two-stage compressor of 144 c. f. m. displacement at 740 r. p. m., thus the entire locomotive has a compressor capacity of 456 c. f. m.

The engine is fundamentally the same engine as furnished the New Haven in 1930 on its first Diesel switcher except that the first engine was not turbo-charged. By using turbo-charging, it is possible to build these high-speed Diesel passenger and freight locomotives in an accessible, compact form and still retain the heavy-duty construction of the Alco engine.

An American Blower Company's blower is mounted adjacent to the engine and provides air for the traction motors. The blower is driven by V-belts from a pulley on the extension of the main engine shaft. The blower is mounted directly above the center-plate casting and delivers air through the center plate into the bolster.

Adjacent to each engine is a radiator compartment fitted with fin-tube radiators for cooling the water and lubricating oil. These radiators are set flush with the side of the cab and are fitted with shutters for regulating the flow of the air, and by-pass shutters to relieve the strain on the radiator shutters when completely closed. The radiator system is sufficiently large to meet the most severe operating requirements. Air is drawn through the radiators by a 54-in. G. E. Aphonic fan driven by V-belts from a pulley on the extension of the main engine shaft.

Electrical Equipment

The electrical equipment is built entirely by the General Electric Company. It includes two main traction generators per unit, together with a directly connected auxiliary generator, a belt-driven exciter, four GE-726 series traction motors and complete type P control equipment.

The main generator is supported by the engine frame and two spring-loaded feet attached to the generator frame. This construction insures alinement between the engine and the generator armature. A single self-alining roller bearing is used at the outboard end of the armature shaft. A split-pole exciter furnishes excitation to the main generator, an auxiliary generator supplies power for the control circuits, the electrically operated auxiliaries and for charging a 32-cell starting and lighting battery. Each main generator furnishes power for two direct-current commutating-pole traction motors. These motors are supported in the locomotive truck by sleeve-type axle bearings and spring nose suspension from the truck frame. The motor armature bearings are the roller type. The armature shaft is so installed that it can be removed without disturbing the windings or commutator. The motor frame is an integral steel casting and has large openings for inspecting brushes.

The type P single-end, multiple-unit control functions with a minimum of attention on the part of the engine operator. The initial movement of the locomotive throttle closes contacts which operate the main circuit and field contactors. Additional movement of this throttle controls each engine governor, regulating the speed of the locomotive. The traction-motor reverser and line contactors are pneumatically operated and the remaining contactors magnetically operated.

Each pair of traction motors is arranged for series, parallel and shunt-field operation. The motor connections are changed automatically from series to parallel and from parallel-full-field to shunt field.

Automatic transfers are made not only at rated engine speed but over the entire operating speed range of the engine. The relay which effects this automatic control materially increases the engine utilization during partial control and as a result more rapid acceleration as well as higher average and top locomotive speeds are obtained when operated at reduced engine speeds. A wheel-slipping relay with a buzzer warns the operator when any pair of wheels slips.

A multi-button switch at the operating stations gives the engineman control of the fuel pump, engine starting and the several lighting circuits.

Auxiliary Equipment

In each unit, there is a Clarkson steam generator rated at 2,250 lb. of steam per hour. This is a flash-type steam generator and is automatic. Also in each unit is an electrical control compartment. Here all the contactors, reversers and relays are located. The cabinets are divided so that the power circuits of each power plant are separate in all respects. All wiring is enclosed in metal conduit and the leads from the battery box come directly into the cabinet.

Each unit is equipped with a 32-cell Exide battery located beneath the underframe in a compartment built into the water tank so that it is easily accessible and well protected. Also beneath the cab and between the trucks are the fuel-oil tanks and the air reservoirs. The air reservoirs have a total capacity of 62,000 cu. in. per unit, or 124,000 cu. in. for both units.

The locomotive is finished in accordance with the New Haven's regular practice for streamline locomotives; the exterior of the cab is painted Pullman green with gold stripes, figures and letters. The New York, New Haven & Hartford monogram appears in black letters on the front of each streamline nose. The parts below the cab are painted black.

Fixes 1942 Equipment Program

WPB authorizes 18,000 cars and 300 locomotives in addition to those authorized by SPAB; production schedules to be controlled and new rolling stock rationed

WASHINGTON, D. C.

Director Eastman's comments on the WPB equipment quotas are reported on p. 759

FOLLOWING through from its April 4 limitation orders taking control of the production and delivery of cars and locomotives, the War Production Board on April 8 announced that materials would be allocated during the remainder of 1942 for the production of 18,000 freight cars and 300 locomotives, in addition to the 45,000 cars and 926 locomotives contemplated in the schedules running to May 1 which were approved on January 2 by the former Supply Priorities and Allocations Board. No assistance will be given for additional passenger car construction, but "materials will be made available to complete Army and lend-lease orders" for railroad rolling stock.

The April 4 limitation orders froze all unfinished cars and locomotives in the hands of producers. At that time, the locomotive program authorized by SPAB was "ahead of schedule;" but deliveries under the freight car program were delayed—19,000 cars remaining to be delivered by May 1. These 19,000 cars and the 18,000 others now authorized, along with locomotives hereafter produced, will now be rationed among using railroads by the WPB's Transportation Branch, "acting upon recommendations of the Office of Defense Transportation."

The April 8 announcement of the program was made by Andrew Stevenson, chief of the Transportation Branch, following a closed meeting with the Branch's Railroad Industry Advisory Committee which includes representatives of railroads and equipment builders. The meeting was also attended by representatives of ODT, including P. A. Hollar, acting director of the Section of Materials and Equipment, V. V. Boatner, director of the Division of Railway Transport, and J. W. Barriger, Associate director of that Division, who is now serving as federal manager of the Toledo, Peoria & Western.

63,000 Freight Cars, 1,226 Locomotives for Year

No comment as to the railroad reaction was forthcoming from the Association of American Railroads, nor was there any immediate statement from Director Joseph B. Eastman of ODT, who has refused to indicate whether published reports that he had recommended a 130,000-car program were accurate or inaccurate. One railroad executive, however, was disposed to put the additional 18,000 cars authorized in the best possible setting. He emphasized how they would combine with the SPAB authorizations to produce a 63,000-car program for the current year. Another railroad comment of the faint-praise variety was to the effect that the locomotive program was "all right," contemplating as it does 1,226 engines, i.e., SPAB's 926 and the 300 now authorized. As noted in the *Railway Age* of January 24, page 262, the railroads, in submitting to ODT their estimated steel needs for 1942, included materials for 121,827 freight cars. The latest equipment-on-order data showed that there were 70,602 freight cars on order March 1, and that Class I roads placed 17,405 new freight cars in service during this year's first two months.

As indicated above, the WPB control of production and deliveries will be operated under General Limitation Order L-97 which applies to locomotives, and General Limitation Order L-97-a which applies to freight and passenger cars. Both set forth that "the fulfillment of requirements for the defense of the United States" has created a shortage in the supply of railroad equipment; and "it now becomes necessary in the public interest and to promote the national defense to provide for the orderly scheduling of production and delivery" of such equipment. The restrictions on production and delivery of equipment apply "irrespective of the terms of any contract of sale or purchase or of any other commitment;" while the production and delivery schedules to be established by WPB "shall be maintained without regard to any preference ratings already assigned or hereafter assigned to particular contracts . . . and without regard to production schedules in effect on the effective date of this order. . . "

With the issuance of the orders, car and locomotive builders were advised by wire as to the number they could produce during this week At the same time the April 8 meeting was called "to determine the drastically limited number of locomotives and cars which may be turned out by individual shops." Seemingly this call and preliminary conferring in preparation for the meeting had pretty well informed members of the Industry Committee as to the nature of the program which would be announced by Mr. Stevenson. In any event it is understood that there was not much arguing about the program beyond a suggestion that the rationing phase be dropped and that the equipment in production and that now authorized be used to partially fill pending orders on something like a first-come, first-served basis. As one of those attending the meeting put it, the ground "had been pretty well plowed;" while another spoke of the "general recognition" of the facts about the tight materials situation.

Thus Mr. Stevenson's conference with the Industry Committee turned in the main to a consideration of where the curtailed production schedules would be executed. In the latter connection, no conclusion was reached immediately; and representatives of the car builders met again with the Transportation Branch Chief later in the day. Mr. Stevenson is understood to have suggested that the equipment authorized might be built in railroad shops or concentrated in fewer plants of contract builders than are now being used. In fixing the production schedules WPB will be interested in as much concentration as is practicable in order that some plants now building railroad equipment may be released for the production of war materials.

In assuring the Industry Committee that materials will continue to be made available to complete the SPAB program, Mr. Stevenson went on to say that "inventories now held by the entire industry will have to be

used for this purpose, and pooling of materials may be necessary." As to the locomotive phase of the new program, he said that the 300 additional engines now authorized will include 250 steam locomotives and 50 Diesel-electrics. Construction of the latter, however, "must not interfere with output of Diesel engine crankshafts for military use." With respect to the program for the 18,000 additional cars, Mr. Stevenson said that no materials will be made available for further production of refrigerator cars and provision will be made for "only a limited number of tank cars." Moreover, the additional freight cars "shall be constructed with the fullest possible substitution of wood for steel in their superstructure." As with the rationing, the Transportation Branch will act upon ODT recommendations in directing the types of locomotives and cars to be built.

"The idea behind the construction and delivery scheduling plan," Mr. Stevenson said, "is to make sure that the equipment needed most in our war program is made available, and that it is delivered to those areas where there is the greatest requirement for it."

Allocation for Rail Program

In the same announcement which set forth the equipment program, WPB also revealed that its Requirements Committee had agreed to the allocation of approximately 450,000 tons of materials for the railroads' rail program for the three months beginning April 1. Last month the committee had announced approval of the industry s 1942 requirements for 1,260,000 tons of rail; and approximately 350,000 tons were made available during the first quarter.

Meanwhile, however, it is understood that WPB is planning to issue an order whereby anyone buying new rail would be required at the same time to turn in old rail in amounts which would be graduated to reach 90 per cent of the tonnage of new within 180 days after the effective date of such order. Also, the order is expected to prohibit the sale of old rail without WPB authorization.

Australia's Railways Built to Many Gages

THERE have been many maps of Australia published in newspapers and popular magazines in recent weeks, showing that country's railways—but none reveals their most important characteristic, i. e., their variation in gage. The accompanying map supplies this information. In publishing it no military secrets are divulged, because the data from which it was prepared are readily accessible to any dogged inquirer. This diversity of gages and failure of the individual states, which own the railways, to provide interrelated rail network—as do individual privately-built lines in this country—is, of course, a vexing handicap to efficient transportation on that continent. This state has stemmed from a policy of railroad building by the individual state governments—activated by political rather than economic motives. Inter-state jealousies have also, perhaps, had something to do with the situation—with the result that each state system is focused on a single big port, while through lines across the continent were left largely to chance.

Building by the Commonwealth (federal government) of the 1,108-mi. Trans-Australian line across the great plains between Western Australia and Victoria on standard-gage served to throw light on the mischief of diverse gages, since odd gages at each end of the federal road made its efficient use impossible. Much ado led, some twenty years ago, to the appointment of a "royal commission" on gages which recommended that the country be converted to standard gage in three major stages. There resulted from this program the conversion of a few lines near Port Pirie from the 3 ft. 6 in.-gage of South Australia to the 5 ft. 3 in. of Victoria and extension of the Trans-Australian from Port Augusta to Port Pirie, so that the passengers and freight from Victoria passing over the Trans-Australian road of standard gage would have to change trains only once at Port Pirie instead of twice—from 5 ft. 3 in. to 3 ft. 6 in. and from the latter to standard gage, as formerly. Beyond this

Car Conservation—a Shipper's Viewpoint

An industrial traffic manager, with intensive experience with both rail and highway transportation, offers the following suggestions for the conservation of equipment:

"One superintendent of transportation, long experienced on his own road and in car service contact work, suggests that ODT require the railroads to report all delays to cars of more than 12 hours and that they show cause for any such delay. Such a plan would largely produce self-enforced vigilance against delay.

"To this I would add the requirement that they report all delays of more than 24 hours waiting for loads, including the time of loading or unloading. I would also suggest that a constant check be made of all cars made empty, and report any failure, where it was possible for the industry to load the car outbound.

"The A. A. R. has made the start towards heavier loading with its plan for double and triple loading. It gives the agent too much discretion over handling such loadings en route, and this may serve to discourage shippers from co-operating. If the agent's duty were confined to checking unloadings and rearranging the remainder so it would carry safely, greater shipper co-operation might be had.

"Then if the ODT would co-operate with the suggestion that shippers should either double- or triple-load, or load as the minimum not less than the highest average loading in any region for the year 1941—and require the railroads to report any failures—we would go places with this car efficiency program.

"Inquiry should be made to determine where featherbed rules delay or otherwise reduce the efficiency of equipment and take corrective action. With all this and the spotlight of local car efficiency committees there would be no danger of car or power shortage."

Any other helpful suggestions?

Route Mileage of Government-Operated Railroads in Australia

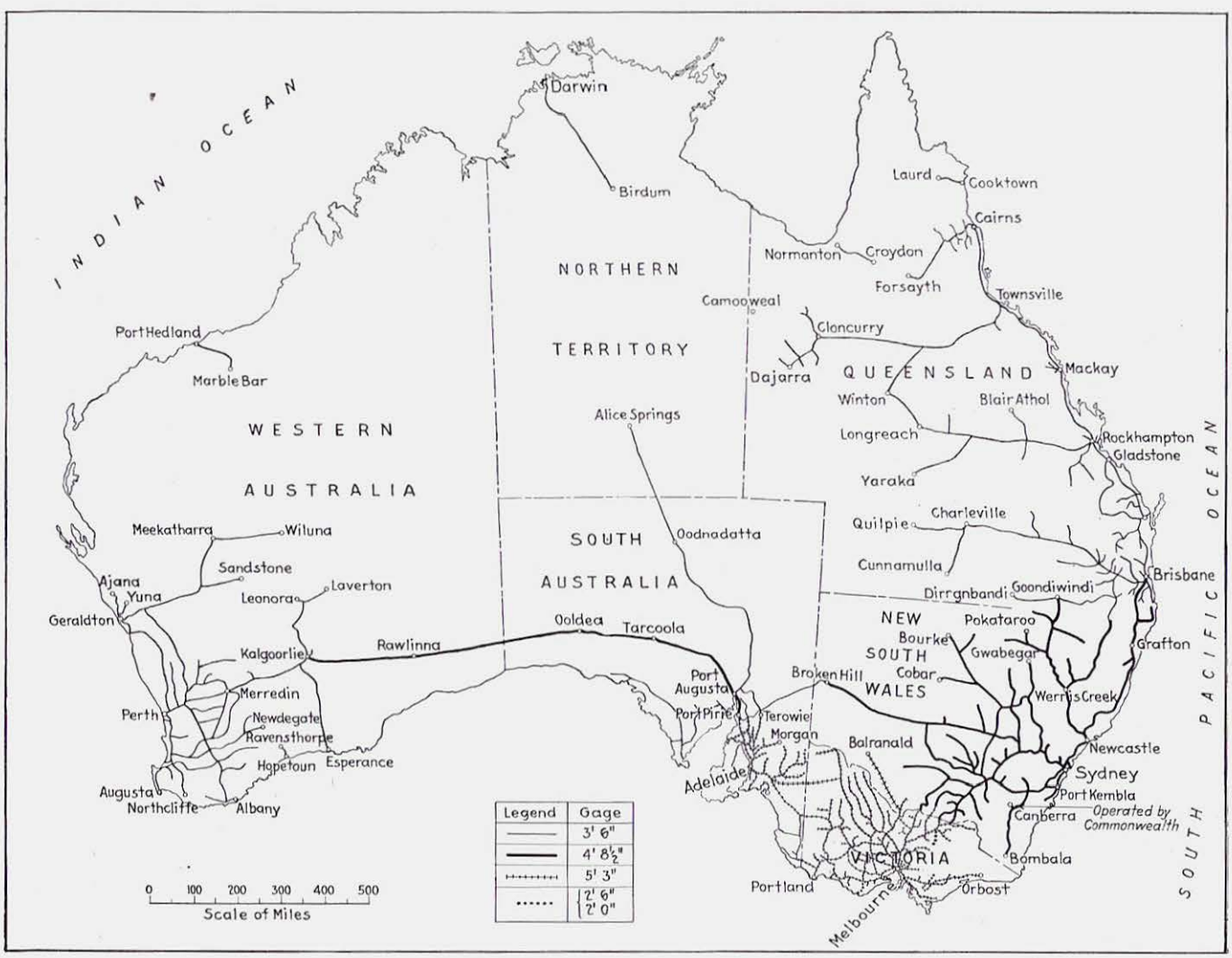
State	Gage					Total
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft.	
Queensland	.....	†68.82	6,467.57	.....	30.26	6,566.65
New South Wales	.....	6,113.79	.....	.....	.....	6,113.79
Victoria	*4,651.00	.....	.....	121.77	.....	4,772.77
South Australia	1,480.49	.....	1,078.11	.....	.....	2,558.60
Western Australia	.....	.....	4,375.66	.....	.....	4,375.66
Commonwealth Railways	.....	‡1,113.14	‡1,087.91	.....	.....	2,201.05
Total	6,131.49	7,295.75	13,009.25	121.77	30.26	26,588.52

* Includes 254.84 mi. in New South Wales Territory, and of which 52 miles are still being operated by the Railway Construction Branch.
‡ Includes 4.104 mi. of mixed 4 ft. 8½ in. and 3 ft. 6 in. gage.
† Part of Grafton-Kyogie-South Brisbane line.

change, none of the report's recommendations has been effected, and, in fact, the numerous extensions which have been built since 1922 have invariably been constructed on the gage of the lines with which they connect. The accompanying table shows the mileages of each gage operated by each state system.

Even the federal Commonwealth Railways, builder of the standard-gage Trans-Australian, also constructed the 771-mi. Central Australia line and the 316-mi. North Australia line on a 3 ft. 6-in.-gage to correspond with the South Australian system. These lines, it might be noted, are of particular importance now as the "life-line" for the defense of Darwin. The former runs north across the barren "gibber plains" to Alice Springs, whence it is connected by a new defense highway to Birdum, railhead of the North Australia line extending across the desert and through 100 mi. of jungle to the northern port, now butt of heavy Japanese attacks.

Strangely enough, the Commonwealth Railways operates a four-mi. stretch of standard gage line from Canberra, national capital of Australia, to a junction with the N. S. W. system. The line is wholly isolated from the main Commonwealth system. A similar procedure in this country might be for Mr. Ickes' Alaska Railroad to operate Union Station and Potomac yards, Washington, D. C.



Map of Common Carrier Railroads in Australia (Mainland) Showing Diversity of Gages

Air Travel Statistics Come of Age

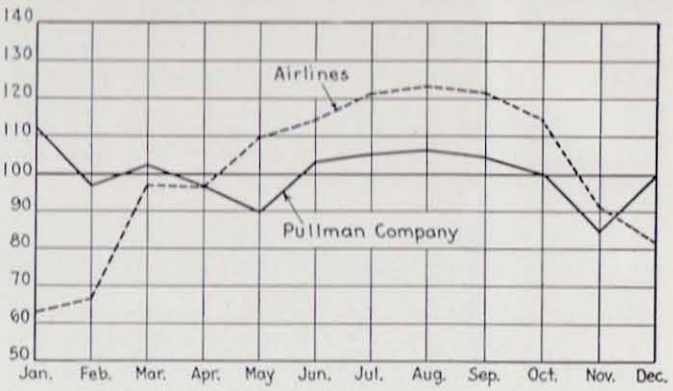
THE excellent work of the Civil Aeronautics Board in building up a body of statistics on organized commercial air transport comparable in range and utility to that on railroad operations organized and published by the Interstate Commerce Commission and the Association of American Railroads now makes it possible for railroad officers to keep far better tab on their newest competitor than heretofore. Indeed, two detailed studies released in 1941 and 1940 by C. A. B. (and its predecessor Civil Aeronautics Authority) furnish specific point-to-point data on air passenger and mail traffic which has never been available on railroad traffic, except to a limited extent in studies made for the depression-time Federal Co-ordinator.

The "Station-to-Station Airline Traffic Survey" made during the month of August, 1939, and published by C. A. A. in 1940, not only presents average passenger counts on scheduled flights during the month at 179 points in the country so served, but actually tabulates monthly averages of such items as revenue passengers, schedules, planes operated, flights pertaining to service between each of the 179 points.

Of particular interest to railroads (and not repeated in the more up-to-date air survey) are comparative "seasonal variation indexes" for domestic airlines and the Pullman Company (with which the airlines compete most directly). These indexes are set forth in the graph appearing on this page. Showing how passenger traffic on each medium varies from month to month, the indexes are based upon primary traffic data covering *at least* the months between May, 1934, and June, 1939, inclusive. The indexes themselves are relative deviations from normal monthly averages of each year.*

As the accompanying graph indicates, airline traffic shows pronounced "seasonality" as compared with Pullman traffic, due principally to public fear of flying in winter and loss of traffic by flight cancellations in bad weather periods. The airlines have improved their safety and all-weather performance records drastically in the last two years, however, and an air seasonal trend for the latter years would probably be much "flatter" than that here shown.

The monumental, three-volume "Origin and Destination Airline Traffic Survey" for September, 1940, published by C. A. B. in 1941, is the latest and most complete compilation of data on air travel yet made. Accounting for every revenue passenger on scheduled flights of 16 carriers between 4,000 combinations of terminals in continental United States and between such



In Winter Air Traffic Slumps

This graph shows the seasonal trend in passenger travel on transport airlines as compared with Pullman traffic. It was prepared by *Railway Age* from seasonal variation indexes covering a five-year period ending with June, 1939, published by the Civil Aeronautics Authority.

* As described in the survey: "The method adopted to determine the seasonality was to compute the relative deviations from a moving average computed from a two-item total of a 12-month moving total with the sum divided by 24. This is the same thing as a two months' moving average of a 12 months' moving average of the date. The relatives were then computed by dividing the original data by the ordinates of the moving average, multiplying the ratio by 100, and then averaging the corresponding months, making due correction for any unbalance of the data about the yearly mean of 100. Interestingly, this technique of computing a moving average produces smoothed data centered at the middle of the month, while some other techniques do not. All indexes are based upon primary series taken from Form 2780 and extending, at least, from May, 1934, to June, 1939, inclusive."

Table I—Air Transport Passenger Traffic at 20 Busiest Points, In Order of Volume—September, 1940

Rail Passengers † In and Out (Est.)	City	Air (Actual) Passengers In and Out	Air (Actual) Passengers Originated	P. C. Originated by Individual Lines*
1,756,080	New York	76,784	38,329	AAL (54) CAN (4) EAL (19) TWA (12) UAL (10)
723,600	Chicago	37,382	18,533	AAL (36) BNF (2) CHI (4) EAL (6) NWA (9) PCA (3) TWA (20) UAL (20)
198,720	Washington	26,300	13,292	AAL (35) EAL (44) PCA (21)
75,816	Detroit	22,979	12,183	AAL (48) PCA (49) TWA (3)
388,044	Boston	22,231	10,222	AAL (91) BME (9)
62,208	Los Angeles	15,060	7,655	AAL (15) TWA (14) UAL (51) WAA (20)
94,284	Cleveland	13,583	6,412	AAL (16) PCA (42) UAL (43)
268,164	San Francisco	12,013	5,982	TWA (3) UAL (97)
154,548	Pittsburgh	9,498	4,605	PCA (28) TWA (72)
850,500	Philadelphia	8,429	4,060	AAL (16) EAL (31) TWA (39) UAL (14)
100,224	St. Louis	7,309	3,644	AAL (37) CHI (24) EAL (1) TWA (38)
70,740	Buffalo	6,683	3,373	AAL (93) PCA (7)
66,060	Kansas City	6,491	3,265	BNF (19) MCA (15) TWA (67)
18,684	Seattle	6,470	3,244	NWA (29) UAL (71)
20,736	Dallas	6,134	2,986	AAL (39) BNF (49) DAL (13)
70,704	Minneapolis	6,084	3,032	MCA (13) NWA (87)
62,532	Atlanta	5,703	2,900	DAL (35) EAL (65)
72,144	Cincinnati	5,607	2,884	AAL (86) TWA (14)
24,620	Portland (Ore.)	4,882	2,461	NWA (14) UAL (86)
16,632	Houston	3,882	1,944	BNF (66) EAL (34)

†Only published data on traffic at individual points published by Federal Co-ordinator of Transportation for 12 months of 1933. These rough estimates were computed by determining average month's traffic in 1933 and multiplying by percentage increase revenue passengers of Class I carriers in 1940 over 1933 plus seasonal index for September. Hence they do not reflect actual traffic at individual points but only increases as related to all passenger traffic. Hence, Washington, D. C., figures are probably greatly underestimated, for example. ¶Figures exclude passengers moving on commutation tickets but include many steady suburban passengers holding round-trip or multiple-trip tickets. Note difference between rail traffic at Philadelphia and Los Angeles as compared with air traffic.

*Abbreviations as follows:
AAL American Airlines, Inc.
BME Boston-Maine Airways, Inc. now Northeast Airlines, Inc.
BNF Braniff Airways, Inc.
CAL Continental Air Lines, Inc.
CAN Canadian Colonial Airways, Inc. & Ltd.
CHI Chicago & Southern Air Lines, Inc.
DAL Delta Air Corporation
EAL Eastern Air Lines, Inc.
INL Inland Air Lines, Inc.
MCA Mid-Continent Airlines, Inc.
NAL National Airlines, Inc.
NWA Northwest Airlines, Inc.
PCA Pennsylvania-Central Airlines Corp.
TWA Transcontinental & Western Air, Inc.
UAL United Air Lines Transport Corporation
WAE Western Air Express Corporation now Western Air Lines, Inc.

points and Canadian airports, it covers 550 large tabular sheets. Table I, prepared by *Railway Age* from C. A. B. data, sets forth actual air passengers in and out of the 20 busiest points in the country in September, 1940, together with the percentage participation by individual lines. For reference, rough estimates of railroad passenger traffic are listed in italics therewith.

It will be noted that air traffic shows a high degree of concentration among relatively few air "stations." According to the C. A. B. survey: "3.6 per cent of the total number of air stations accounted for half the number of passengers; 13.0 per cent of the air stations for three-quarters of the passengers and 30.2 per cent of the air stations for 90 per cent of the passengers. The remaining air stations, amounting to 70 per cent of the total, produced, of course, only 10 per cent of the total traffic. There was an even higher degree of concentration in respect to passenger miles flown, 3.1 per cent of the air stations accounting for half of the passenger miles; 10.9 per cent of the air stations for three-quarters of the passenger miles and 27.1 per cent of the air stations for 90 per cent of the passenger miles; while the remaining 72.9 per cent of the air stations produced only 10 per cent of the total passenger miles."

Table II—The Twenty Most Heavily Traveled Air Routes in Order of Rank

Between	Distance Miles*	Rev. Passengers in Sept., 1940†
New York and Boston	184	14,189
New York and Washington	214	13,195
New York and Chicago	724	7,336
Los Angeles and San Francisco	327	5,137
Chicago and Detroit	247	4,785
Detroit and Cleveland	91	3,849
New York and Detroit	486	3,689
New York and Buffalo	292	3,123
New York and Providence	143	2,674
New York and Pittsburgh	320	2,608
New York and Cleveland	418	2,337
New York and Philadelphia	95	2,269
Seattle and Portland, Oregon	138	2,163
New York and Montreal	329	2,139
Chicago and Minneapolis	350	2,117
Chicago and St. Louis	251	2,047
Chicago and Cleveland	307	1,973
Chicago and Kansas City	405	1,790
New York and Los Angeles	2,509	1,558
Los Angeles and San Diego	122	1,459

* Via shortest non-stop air route.
† In both directions.

More easily grasped perhaps is the fact that 65 per cent of air passenger traffic in the country is carried between the ten cities which lead in air travel. Railroad passenger traffic shows less concentration, since much of it fans in and out of the big cities, whereas air transportation is connective rather than dispersive. No comparable figures on railroad traffic are available (i. e., showing *both* origin and destination) but the Co-ordinator's "Passenger Traffic Report" (1933) reveals that some 50 per cent of total railroad passengers *either* began or terminated their journeys in one of 12 big cities —New York; Philadelphia, Pa.; Chicago; Boston, Mass.; San Francisco, Cal.; Washington, D. C.; Pittsburgh, Pa.; Baltimore, Md.; Cleveland, Ohio; Detroit, Mich.; Minneapolis, Minn.; and St. Paul. Some 17 per cent of railroad passengers originated or terminated in New York City alone.

Table II lists the 20 most heavily traveled air routes in order of rank and revenue passengers between the points cited in September, 1940. Total passengers on these routes (and between these termini alone) were 80,437, or 29 per cent of total passengers carried. The New York-Boston route—the most heavily traveled—is a monopoly enjoyed by one carrier—American Air Lines. Apparently good service by one carrier doesn't discourage business.

Table III sets forth miscellaneous comparative data for commercial airlines, railroads and the Pullman Company, respectively, compiled by *Railway Age* from C. A. B., I. C. C. and Federal Co-ordinator's reports. The economic and physical contrasts between these transportation media makes literal interpretations of such comparisons invalid and misleading, but placing the figures in adjacent positions may highlight some significant facts. Concerning comparative "load factors" (i. e. per cent revenue seat-miles of total seat-miles operated) it should be noted that 70 per cent is held to be the highest practicable load factor for scheduled air flights, due to necessary seat vacancies from intermediate stops, dead-heading planes when travel flow is uneven and passenger sacrifice for extra fuel loads in bad weather. The airlines have produced an excellent record in attaining 58 per cent, and are out to do better, if current C. A. B. applications for non-stop flights are any indication. The optimum railroad load factor is probably less than 70, since intermediate travel is much more important and land vehicles can afford to be more generous in furnishing vehicle space.

Table III—Railroad-Air Transport Passenger Data For 12 Months of 1940 Compared

Units	Airlines	Railroads	Pullman Co.
Revenue Passengers Carried	2,727,820	452,920,914	14,765,316
Revenue Passenger-Miles (000)	1,041,173	23,762,359	8,213,876*
Av. Distance Per Passenger	381	52	556
Av. Fare Per Passenger-Mile (Excl. Commutation)	0.051	0.019	0.006
Passenger-Carrying Planes or Cars	358	32,000†	6,379
Av. Pass. Capacity Per Unit	17	72	20
Load Factor (Per Cent)	58	Note‡	45 (est.)
Route-Miles of Pass. and Mail Service	41,054	216,000	110,000
Revenue Plane or Car Miles (000)	108,830	3,011,639	820,386

* Includes passengers on railroad passes.
† Estimated. Total passenger-train cars—37,817.
‡ Load factor in coaches was 18 p.c. in 1933, according to the Federal Co-ordinator.

Table IV shows the increase in air travel at the 10 leading air "stations" during September, 1940, as compared with November, 1939, the most comparable months for which point-to-point traffic data is available.

Table IV—Increase in Air Passengers at Ten Busiest Points September, 1940, Compared with November, 1939

Station	Per cent Increase
New York	79.7
Chicago	52.5
Washington	79.5
Detroit	80.7
Boston	61.3
Los Angeles	64.4
Cleveland	88.4
San Francisco	54.7
Pittsburgh	31.8
Philadelphia	123.5

The figures indicate that while air travel increased at all points, the improvement was far from uniform. Since none of the cities mentioned are resort points, individual seasonal variation accounts very little for the great differences. New York's big increase is probably due to the fact that LaGuardia Airport was not yet open in November, 1939, while the big increase at Philadelphia reflects a substantial improvement in airport accommodations and flight frequencies. These figures show that air travel is highly responsive to service improvements by both the carriers and the government authorities which build their "stations" for them.

NEWS

Crossing Safety Will Hit the Axis

U. P. campaigns to cut crossing hazards to trains hauling troops and munitions

A campaign to eliminate grade crossing accidents—with avoiding waste to the war effort as an added incentive, has been undertaken by the Union Pacific. To this end, the railroad has endeavored to secure official action which might curtail such accidents and has appealed to the public through advertising, and news "releases."

As early as December, 1941, W. M. Jeffers, president, appealed to New York's Mayor LaGuardia (who was then head of the Civilian Defense Organization) and to J. H. Helm, the Civilian Defense officer at San Francisco, Cal., and later brought the matter to the attention of the governors of all of the states through which the Union Pacific operates. "The serious menace of the increasing number of accidents at highway grade crossings," Mr. Jeffers wired Mayor LaGuardia, "constitutes such an extreme hazard to the safe and continuous operation of the railroads which are so vitally essential to our national defense effort and the successful prosecution of this war, and especially the transcontinental lines in the West, that I strongly feel this problem should and must have the attention and vigorous action of the National Government.

"I myself have addressed the governors of the western states in which the Union Pacific lines extend, bringing this condition to their attention, but these occurrences are so numerous and fraught with such a serious element of hazard to the movement of troops, equipment and critical munitions of war that I respectfully request and urge that you bring to bear with the governors your influence as Director of Civilian Defense and that you personally request them to institute effective methods and take vigorous action for the prevention of accidents of this description."

In another telegram to Governor Dwight Griswold of Nebraska, Mr. Jeffers suggested that a proclamation be issued on the subject and that a vigorous campaign be instituted throughout the state to correct such carelessness. "I feel there is more hazard of a derailment with appalling results from these trains striking vehicles on road crossings than there is from sabotage," said Mr. Jeffers.

"Recently," the telegram continued, "a westbound freight train moving at high speed struck a truck loaded with sand on the crossing at Richland, Neb., resulting in a very serious derailment and resultant delay to traffic. The crossing is protected by wig-wag signals which were functioning properly. This train might just as well have been one of the fast-moving troop trains."

In an advertisement directed to the public, the Union Pacific appeals to the drivers of motor vehicles. "Now—more than ever before—," the advertisement reads, "these railroad warning signs should be rigidly observed, night and day. Rolling over the rails are shipments of materials for armament plants, trainloads of troops and supplies. They must go through without delay. America's welfare—and your welfare—are at stake. Please, then, be extremely careful when approaching railroad crossings. In that way—you, too, can help."

Truck Movement of Livestock

More than two-thirds of the cattle, 70 per cent of the hogs, and about a third of the sheep and lambs received at 68 major livestock markets in 1941 were "drive-ins"—mostly trucked—it is revealed in the April 7 bulletin of the A. A. R. Competitive Research office, 30 Vesey street, New York.

"Drive-in" hogs at 17 markets accounted for only about 2 per cent of the total receipts in 1916. In 1941 about 76 per cent of the hogs received at these 17 markets were "drive-ins." A similar trend is shown for other livestock. The A. A. R. report is a time-saving summary of a detailed study recently issued by the Department of Agriculture. It contains a table showing the "drive-in" totals and percentages for 68 markets in 1935, 1940 and 1941, by types of animals; and a further detailed tabulation for four large individual markets—Chicago, Cincinnati, Indianapolis and Louisville.

Forwarder Order Again Postponed

The Interstate Commerce Commission has further postponed from April 15 until July 1 the effective date of its outstanding orders which require the discontinuance of joint rate arrangements between forwarders and motor carriers. The orders are in MC-31 tariffs of forwarding companies, and MC-2200, the proceeding involving the status of Acme Fast Freight, Inc.

Morse Outlines War Wage Policy

He seems to favor wage increases in one sentence and, in the next, to oppose them

Industrial disputes which interfere with the successful prosecution of the war, such as those which come before the National War Labor Board, must be settled by decisions rendered in the interests of national security irrespective of differences of opinion which may exist as to the merits of a given decision, according to Wayne L. Morse, dean of the University of Oregon Law School and public member of the National War Labor Board in an address at the annual dinner of the Junior Traffic Club of Chicago, on April 7. "Agencies of government may, and undoubtedly will, make mistakes in rendering decisions, at least in the eyes of one group or another," he continued. "The fact remains that wartime internal disputes must be settled. If necessary, they must be settled by government decisions and those decisions must be enforced. It is only by a willingness to accept, as a wartime policy, the orderly settlement of internal disputes by governmental adjudication, no matter what sacrifices may be involved, that we can attain as a nation that degree of unity essential to victory.

"There have been those who have taken refuge in the sanctuaries of our Bill of Rights and thus protected, have practiced unbridled license to the end of confusing and disuniting our citizenry. The result is that judicial processes have too frequently been circumvented by direct action or extralegal tactics. In some cases even in the railroad industry there has been defiance of a war government and refusal to submit disputes on their merits to arbitration.

"In the absence of complete governmental regimentation of all phases of our economic life (and it is to be hoped that we shall be delivered from any such program unless war events should make it a war necessity) it would seem best that flexibility should characterize the policies governing wartime industrial disputes.

"The laws of economics work in devious ways. They cannot be confined within the clauses of some inflexible policy or arbitrary piece of restrictive legislation that permits of no discretion in their application. The interplay of economic forces defy static economic formulae, and such is especially true of a war economy. The very nature of the necessities of war call for

(*Continued on page 765*)

Reject Rate Pleas of OPA and ODT

Railroads refuse to give up part of the Ex Parte 148 increases

Asserting that any increases in prices caused by the Ex Parte 148 freight rate increases "are not in the category of speculative, unwarranted or abnormal increases in prices such as the Office of Price Administration was presumed to prevent," the railroads have rejected OPA's request that they eliminate the rate boosts on an important group of commodities. At the same time the carriers denied a similar request from the Office of Defense Transportation.

The railroad action, taken by the carriers' so-called Ex Parte 148 Committee, was revealed in letters which A. F. Cleveland, vice-president of the Association of American Railroads, sent on April 6 to John H. Eisenhart, Jr., director of OPA's Transportation Division, and G. Lloyd Wilson, director of ODT's Division of Rates. As noted in the *Railway Age* of March 21, page 576, the OPA and ODT presentations were made to the Ex Parte 148 Committee at a March 13 session in New York, OPA having previously filed with the Interstate Commerce Commission a petition (which the ICC denied) seeking a suspension of tariffs publishing the increased rates on the commodities in which the price agency was interested.

Mr. Cleveland's letter to Mr. Eisenhart pointed out how carrier estimates indicated that in meeting the OPA request the railroads would forego some $41,000,000 in annual revenue. Also, OPA was reminded that the occasion for the railroads' petition in Ex Parte 148 "was that through operation of law and governmental mediation their operating expenses had been increased some $331,771,000 as a result of the wage increase and that other increased expenses would bring this figure up to more than $360,000,000 per annum."

Meanwhile, Mr. Cleveland went on, the Ex Parte 148 decision gave to the carriers additional freight and passenger revenues totaling only $249,000,000, or "$111,000,000 less than the railroads believe they should have received." The OPA request would reduce the commission's award "by about 20 per cent based upon the railroads' estimate." In addition, the OPA presentation had indicated that requests for other adjustments would follow, it being intimated that if railroad revenues continued at the January level, "efforts would be made to have cancelled all of the Ex Parte 148 increases."

In turning down the OPA request, the railroad committee "did not consider that the railroads by retaining the increases granted by the commission could be charged with responsibility for any tendency toward inflation." In this connection the Cleveland letter went on to note how the Emergency Board in the wage case had recognized the possibility of an inflationary tendency "when it made its recommendations for a substantial increase in railroad operating costs;" but that board "also recognized the fact that under present conditions it is in the interest of the public and the government that the railroads should have sufficient revenues to permit them to respond to the unusual necessities put upon them by the various branches of the government."

With respect to the effect of freight-rate increases on prices, Mr. Cleveland referred to the tendency "to automatically consider that an increase in freight rates on a commodity amounting to three per cent or six per cent, as the case might be, will increase the delivered cost of that commodity by three or six per cent." The fact is, he explained, that the percentage increase "has been applied only to that portion of the delivered cost which is caused by the payment of railroad transportation.

The remainder of Mr. Cleveland's letter to Mr. Eisenhart was a series of brief comments in connection with the individual commodities on which OPA had sought elimination of the increases. Similar brief comment on the commodities and movements in which ODT was interested comprised the letter to Director Wilson of ODT's Division of Rates. For the general arguments in support of the railroad committee's adverse ruling, Mr. Cleveland supplied Dr. Wilson a copy of the letter to Mr. Eisenhart.

G. M. & O. Gets Truck Routes

Subject to the usual conditions designed to insure that the trucking services shall remain auxiliary to rail service, the Interstate Commerce Commission, Division 5, has granted to the Gulf Transport Company, subsidiary of the Gulf, Mobile & Ohio, a certificate authorizing common-carrier trucking operations between Tuscaloosa, Ala., and Columbus, Miss., between Columbus and Starkville, Miss., and between West Point, Miss., and the Mississippi state line near Corinth.

OCD Issues Camouflage Booklet

Camouflage methods for industrial plants, factory buildings, railroad yards, airfields, routes of communication, conspicuous landmarks and transportation systems are described in a 68-page illustrated booklet entitled "Protective Concealment," just issued by the Office of Civilian Defense. The booklet was prepared by the War Department under the direction of the Chief of Engineers, U.S. Army, by the Engineer Board, with suggestions of the National Technological Civil Protection Committee.

Henderson Urges "Buy Coal Now"

Price Administrator Leon Henderson has joined the parade of those high government officials who are participating in the government's "Buy Coal Now" drive by urging every home owner who burns coal to purchase next winter's supply immediately.

"The advice to buy coal now may develop into a 'now or never' appeal for many coal users," declared Mr. Henderson. "Transportation now is available to haul coal from the mine to consumers' coal bins but by fall our railroad and truck lines will be loaded to capacity hauling war shipments."

WPB Estimates Too Low—Eastman

Transport being a war job, why are its needs classified as civilian requirements?

Director Joseph B. Eastman of the ODT, speaking before the Atlantic States Shippers' Advisory Board in Philadelphia on April 9, made it quite clear that he disagreed profoundly with the niggardly allotment which the WPB has made for railroad equipment construction during the balance of the current year (see page 753 for details).

Nothing enters into this war, he explained, in which transportation is not an ingredient—"not merely indispensable, but all-pervasive." There is the transportation of raw materials for the manufacture of munitions of war, and the transportation of enormous quantities of these latter in unprecedented volume over unprecedented distances. Then there is similar movement of troops over tremendous distances, inland and overseas.

"Why," he then observed, "in the organization of WPB, transportation should be classed along with civilian supply, I am unable to understand."

It is easy to regard transportation as a function of minor importance so long as everything goes smoothly, he said, but just wait till there is a *hitch* somewhere, as there was recently in the port of Philadelphia. Then people begin to see how vital transportation really is to everything we must do in fighting this war.

Director Eastman indicated that he was not going to accept the WPB's meager estimate of the country's needs for transport materials. He is going to continue to insist that the WPB quotas be raised, and he hopes there will be "modifications." "Conversations will continue," he added.

Complimenting the railroads and shippers in terms of highest praise for efficiency of railroad performance which they have co-operatively achieved, the speaker declared that still more strenuous efforts would be needed. He cited the increase in tank-car movement of petroleum products to the Atlantic seaboard from 70,000 bbl. daily last fall to more than 500,000 bbl. daily now; and also the withdrawal of coastwise and intercoastal ships, throwing long hauls on the railroads.

The country is rapidly accelerating to production levels heretofore unheard of at any time or place—and this alone would put a strain on the rail carriers, even if they did not have diverted traffic from other agencies of transportation to concern them. The speaker drew attention also to great shifts in the direction of traffic (westward in the Pacific Coast area, for example, instead of predominantly eastward, as always heretofore).

The greatest operator of trucks in this country, directly or indirectly, Mr. Eastman said, is the Pennsylvania Railroad—and other rail carriers have so adopted the truck as an auxiliary vehicle that the two transportation agencies are being made to complement each other. At the same time,

however, it will be a very serious thing for the railroads if, because of the rubber shortage, any considerable quantity of the goods now moving by truck are diverted to them.

The answer to all these growing demands on the railroads would be to build more equipment, and that is the answer Mr. Eastman favors. However, the WPB and not he has the say-so as to how scarce materials are going to be doled out among various users. With its predominant concern for war materials and shipping, Mr. Eastman fears that the board may make the mistake of diverting more material from transportation than is wise.

General Order No. 1 of the ODT was defended by the speaker. Time will tell whether the order will prove helpful, but there is no doubt that the problem of light-loaded l. c. l. cars must be tackled. Using 20 per cent of the cars to haul 1½ per cent of the tonnage cannot be continued under present conditions.

Cars spend five times as much time in terminals as on the road. This ratio must be reduced—and this is a railroad, as well as a shipper's duty. There must be a maximum of co-operation; a minimum of competition; and pooling of various kinds to reduce waste. Shippers were informed that inadequate loading was the principal manner in which they were failing to do their whole duty. Observance of commercial minima must cease and cars must be loaded to the limit even if this involves extra cost or other sacrifice.

Taking trucks out of the long-haul field was not easy on an arbitrary basis, he said, because sometimes trucks were needed on long hauls—not for economy, but for convenience. Such long truck hauls should be eliminated, however, unless they are clearly justified, the speaker indicated.

Speaking on the same program with Director Eastman, Chairman Warren Kendall of the Car Service Division discussed the possibility of a car shortage at an early date.

"Probably no one at this time," he said, "will care to positively predict that a car shortage during this year of 1942 will not occur. That is a far different thing from saying, as some have, that a serious car shortage is imminent. There are too many intangibles. One factor of paramount importance is somewhat beyond the control of the railroads: Will they be permitted to share in industry production to the point of securing materials needed to build locomotives and cars on order, and which have been on order for months, and to maintain the existing equipment at its present level of operating efficiency?

"There were, as of March 1 last, about 70,000 cars and 650 locomotives on order, which were estimated by railroads as necessary to handle prospective traffic. At the moment, there appears to be some question as to whether material will be allocated in the immediate future to meet the full complement of these orders. If there is failure to obtain these materials and a transportation shortage results, the responsibility will not be entirely on the railroads, due either to any lack of foresight or effort on their part.

"All of this adds up to just one thing: The railroads and those whom they serve must get the utmost out of the available facilities, and this they are all striving to do.

"There always have been, and very likely always will be, a certain few who do not sense the necessity for individual action, but proceed according to the plan of what is now commonly referred to as business as usual. Something must be done to bring home the all-too-evident fact that there is an emergency in which every individual has a part to perform. Commissioner Johnson of the I. C. C. has probably done more than any other individual to bring this fact home to all of us."

ODT Appointments Announced

The appointment of Edwin M. Fitch and Dorothy Sells to the staff of the Division of Transport Personnel has been announced by Joseph B. Eastman, director of the Office of Defense Transportation.

Mr. Fitch, former chief statistician of the Railroad Retirement Board, will serve as assistant to Otto S. Beyer, director of the Division of Transport Personnel. Miss Sells, who has been head of the research division of the Maritime Labor Board, has been named chief of the Personnel Supply Section of the Division. "She will serve as the link between the Division and the Selective Service Administration and will have charge of all matters relating to the employment of women in the transportation industry," declared Mr. Eastman's announcement.

King Heads Bureau of Service

Homer C. King, assistant director of the Interstate Commerce Commission's Bureau of Service, has been appointed director, succeeding C. C. Wall who, at his own request, has been appointed service agent for the Bureau with headquarters at Detroit, Mich.

Mr. King was born in Kansas and began his career as a school teacher in his native state. Thereafter he went to Colorado where he worked at railroad construction, as a cattleman, and on irrigation projects. Meanwhile Mr. King had learned stationary engineering, an occupation which then followed until he entered railroad service as a locomotive fireman on the Atchison, Topeka & Santa Fe. During World War I he enlisted in the Army and served in France for 18 months with the 21st Engineers, a railroad unit, returning after the war to his former employment on the Santa Fe.

Harris & Ewing

Homer C. King

In 1922 Mr. King entered I. C. C. service as a locomotive inspector, and while thus employed he studied law. He has been a member of the Georgia bar since 1926, and of the bar of the U. S. Supreme Court since 1935. In 1931 he was appointed special examiner for the commission with headquarters at Washington; and in 1938 he became assistant director of the Bureau of Service.

T. P. & W. Officers on Trial

George P. McNear, Jr., president, H. H. Best, superintendent, and Bruce Gifford, trainmaster, of the Toledo, Peoria & Western, were brought to trial before a jury in the district court at Peoria, Ill., on April 6, on charges of violating the railway labor act by coercing and intimidating employees to discourage their joining the Brotherhood of Railway Trainmen. The case, based on a 24-count criminal information brief, filed by the district attorney on January 5, is the first of its kind under the railway labor act of 1926. The information alleges that certain employees were threatened with discharge or loss of seniority rights during the brotherhood's organization campaign in the Fall of 1940. The defendants also were accused of attempting to influence employees by offering bonuses and wage increases to compensate for the increases in federal income taxes.

The first witness, Cletus Kirk, testified that Best told him "the company plans to knock you boys out" by rehiring men who lost their jobs with the railroad during the 1929-30 strike. He said Best told him that if he did not resign he would be discharged, and that he resigned "under protest."

Dwight Milljour testified that Gifford told him, before the brotherhood won collective bargaining powers in an election of October 3, 1940, "You know there are a number of eligible men up for reinstatement, and that would make it tough for you."

McNear Summarizes T. P. & W. Dispute

A special report has been prepared by George P. McNear, Jr., president of the Toledo, Peoria & Western, as an acknowledgment to the many people who communicated with the railroad concerning the position it has taken. "The volume of letters and telegrams received from all sections of the country, immediately prior to and since the seizure of our properties by the United States Government," the report states, "is beyond our capacity to reply to each one individually as we would like. The approval of our position, as registered by the tremendously overwhelming majority of those who have communicated with us, is most encouraging. We are deeply grateful for each message and trust this form of reply will be accepted as a sincere

expression of our appreciation for the inspiring help we have thus received."

The report deals with incidents occurring prior to the seizure of the railroad by the government, subsequent developments, and a discussion as to whether the seizure was necessary. It also deals with the new demands of the Brotherhoods and the position of the railroad.

"Whatever has been done or will be done subsequent to March 22, in connection with the railroad's properties, before the War Labor Board or otherwise," the report concludes, "is and will be done solely by and for the account of the federal manager. The changes which the federal manager has instituted are all at the government's responsibility. The railroad still retains its schedules of rates of pay, rules and working conditions which it lawfully inaugurated on December 29, 1941, as well as the seniority list of its men who, bravely and more successfully than ever before, were operating the railroad at the time it was seized on March 22."

Justice Hilliard Appointed Arbitrator of T. P. & W. Dispute

The National War Labor Board, on April 3, appointed Justice Benjamin C. Hilliard of the Supreme Court of Colorado arbitrator of all labor disputes between the Toledo, Peoria & Western and the Brotherhood of Locomotive Firemen & Enginemen and the Brotherhood of Railroad Trainmen. At the same time the National War Labor Board notified George P. McNear, president of the railroad, of the appointment, stating that final settlement of the controversy will depend "upon your compliance with the President's order that the dispute be arbitrated." In its telegram to Judge Hilliard, the Board suggested that arbitration hearings be held in Chicago after the parties notify the National War Labor Board they are ready to proceed.

According to a statement issued by the National War Labor Board, the appointment was made in "accordance with the Board's decision of February 27 ordering arbitration of the dispute." When Mr. McNear refused to comply with the Board's order, President Roosevelt, on March 21, ordered Federal seizure and operation of the road.

In reply to the Board's telegram, Mr. McNear asked, "Does this wire mean that your Board is now proposing a fair form of arbitration such as we expressed willingness to consider at the morning session of the hearing before your Board on February 27? Does this wire also mean that by your Board's latest action, the order which your Board entered late in the afternoon of February 27, requiring us to arbitrate under section 8 of the railway labor act and under the auspices of the National Mediation Board is now definitely revoked and abandoned and of no further force and effect?"

Representation of Employees

The National Mediation Board has made public results of recent elections held in connection with representation-of-employees disputes on several railroads.

On the Wabash the Red Caps chose the United Transport Service Employees of America; on the Central California Traction the Brotherhood of Maintenance of Way Employees won the right to represent the maintenance of way employees; while in the case of the road brakemen and yard service employees (foremen and helpers) on the Midland Terminal the Board has certified the Brotherhood of Railroad Trainmen.

In another case the Brotherhood of Maintenance of Way Employees won the right to represent the maintenance of way employees on the Sacramento Northern; while on the Chicago, Indianapolis & Louisville the patrolmen (including sergeants) in the police department have voted in favor of the National Council of Railway Patrolmen's Unions, A. F. of L.

Dr. Arthur Newell Talbot Passes On

On April 3, Dr. Arthur Newell Talbot, professor emeritus of municipal and sanitary engineering of the University of Illinois, who was responsible for outstanding contributions to railroad research and progress as chairman for 27 years of the American Railway Engineering Association's committee on Stresses in Track, died suddenly of a stroke at the Passavant hospital in Chicago after recovering from a heart attack suffered several days previously. Dr. Talbot retired as chairman of the A. R. E. A. committee on Stresses in Track in October, 1941, at which time a tablet was awarded him by members of that association in recognition of "his pre-eminence in engineering education and research" and "his brilliant research" as chairman of that committee. In 1937 he

Dr. Arthur Newell Talbot

was awarded the John Fritz Gold Medal, highest of American engineering honors, and was cited as a "moulder of men, eminent consultant on engineering projects, leader of research, and outstanding educator in civil engineering."

Professor Talbot aided in developing the University of Illinois College of Engineering and in building the University's testing laboratories, of which the materials testing laboratory bears his name, the first building of the University ever named for a living person. He had long been active in the formation and development of the Illinois Engineering Experiment Station, in connection with which he made numerous investigations of the properties of steel, brick, concrete and reinforced concrete, and in water purification, sewage treatment, and hydraulics. He has also directed studies sponsored by the American Society of Civil Engineers in addition to those sponsored by the A. R. E. A.

Early in his career, Dr. Talbot developed a formula for areas of waterways of bridges and culverts and another formula for rates of maximum rainfall, both of which have been widely used and bear his name today. He later prepared a treatise on a flexible method of laying out easement curves, or spirals, at the ends of circular curves and several editions of this work were later published and his methods were used by many railroads.

In the research on stresses in railroad track, which he directed for 27 years, reliable knowledge on the interrelation between track and rolling stock was developed by a vast multitude of tests on many railroads and in the laboratory. This information has aided in putting the design and construction of the track structure to carry modern traffic on a more rational basis and has also provided valuable information applicable to the design of rolling stock. This research has been characterized as one of the most significant contributions ever made to the scientific knowledge of railroads.

Dr. Arthur Newell Talbot was born at Cortland, Ill., on October 21, 1857. After graduating from high school, he taught a country district school for two years and in 1877 he entered the Illinois Industrial University (now the University of Illinois), graduating in civil engineering in June, 1881, with a scholastic average that remained the record of that institution for many years. After graduation he engaged in railroad location, construction and maintenance in Colorado, New Mexico, Kansas and Idaho. In September, 1885, he returned to the University of Illinois as assistant professor of engineering and mathematics and taught a wide range of subjects, including mathematics, surveying, engineering drawing, contracts and specifications, roads and pavements, railroad engineering, mechanics and materials, hydraulics, tunneling and explosives, water supply and sewerage. In 1890 he was promoted to professor of municipal and sanitary engineering, in charge of theoretical and applied mechanics.

In September, 1926, when Dr. Talbot reached the age limit of the University, he retired from teaching and administration and was made professor of municipal and sanitary engineering, emeritus, but continued actively engaged in directing an extensive research program, which included the research for the A. R. E. A. on stresses in railroad track. In October, 1941, he retired as chairman of the A. R. E. A. committee on that subject.

Dr. Talbot was the recipient of many honorary degrees and medals. He received the honorary degree of doctor of science from the University of Pennsylvania in 1915, the honorary degree of doctor of engineering from the University of Michigan

in 1916, and the honorary degree of doctor of laws from the University of Illinois in 1931. He was an honorary member of the A. R. E. A. and served as a director of that association from 1915 to 1918 and again from 1928 to 1931. He was a past-president and honorary member of the American Society of Civil Engineers and of the American Society for Testing Materials. He was a past president of the Society for the Promotion of Engineering Education and an honorary member of the Institution of Structural Engineers (London), the Illinois Society of Engineers, the Western Society of Engineers, the American Water Works Association and the American Concrete Institute.

In addition to the John Fritz Medal received in 1937, which has been previously mentioned, he received the Washington Award of the Western Society of Engineers in 1924, the George Henderson Medal by the Franklin Institute in 1924, the Henry C. Turner Medal from the American Concrete Institute in 1928, and the Benjamin Garver Lamme Medal from the Society for the Promotion of Engineering Education in 1932.

Railway Purchases-Additions

The Alaska Railroad and several short lines and terminal companies have furnished special reports to this paper covering their purchases of material and equipment in 1941, which were received too late to include in the digest of purchases appearing in the *Railway Age* of March 29 and are therefore given in the following table.

	Coal	Fuel Oil	New Rail	Cross Ties
Alaska	$91,734	$13,761	none	$107,052
East Jersey	none	6,938	none	690
Petaluma & Santa Rosa	none	3,012	none	528
Union of Dallas	546	6,759	none	2,540
New Foundland	768,617	none	none	35,176
Interstate Tank	.....	.....	.....	.....

	Other Material	H/W Trucks	Loco. and Cars	Total
Alaska	$1,032,621	$4,015	$159,876	$1,409,059
East Jersey	1,410	none	none	9,038
Petaluma & Santa Rosa	15,752	none	none	19,292
Union of Dallas	22,130	none	none	45,845
New Foundland	753,667	.....	240,000	1,798,460
Interstate Tank	5,935	.....	.....	5,935

Claim Division to Meet at Chicago on April 28

The annual session of the Freight Claim Division of the Association of American Railroads will be held at Chicago on April 28 and 29. In conjunction with the convention, a meeting of field and road men handling loss and damage prevention work will be held on April 29, separately from the annual convention.

The tentative program for the annual session includes the following: April 28, morning: Address—A. E. Pasman, chairman; Report of General Committee; Election of officers and General Committee members; Balloting for Appeal Committee.

Afternoon: Reports on rules of order and on freight claim rules; Report of tellers on Appeal Committee election; Balloting for Arbitration Committee.

April 29, morning: Report on freight claim rules (continued); Report on Principles and Practices; Report on prevention of loss and damage; Prevention discussion.

Afternoon: Prevention discussion (continued); Report of tellers on Arbitration Committee election; Report of secretary; Adoption of amended reports; selection of place and dates of next annual session; Unfinished business; New business; Installation of officers.

"Freezing" Order Crimps Equipment Trust Issues

The WPB order "freezing" railway equipment under construction—so that the roads which get the cars and engines may not be the foresighted ones which ordered them—has put a temporary quietus on the marketing of equipment trust certificates. The Missouri Pacific, for example, was right in the act of marketing 4½ million dollars of these certificates when along came the hold-up order on equipment deliveries. So the Mo. P. returned the prospective certificate buyers' bids unopened.

The L. & N. also was on the point of selling 11 million dollars worth of equipment paper—when the WPB order caused it to stop short, to wait and see, first, whether it is going to get the rolling stock it wants before borrowing the money with which to pay for it.

The Canadian Roads in February

The Canadian National in February had operating revenues totaling $24,950,000—an increase of $4,706,506 over last year. Expenses were $21,305,560 (up $3,671,183). Operating net was $3,644,440—an increase of $1,035,323. For the two months, operating revenues were $50,917,000; expenses $42,115,448; and operating net $8,801,552—representing increases over last year of $9,746,539 in gross, $6,704,498 in expenses and $3,042,041 in net.

The Canadian Pacific's February gross was $18,238,114 (an increase of $4,130,776). Its operating expenses in February were $15,224,101 (up $3,725,332). Net operating revenue was $3,014,013 (an increase of $405,444). For the two months, gross was $36,898,387; expenses $30,700,311; and operating net $6,198,076—representing increases, respectively, of $8,105,703, $7,181,958 and $923,745.

Equipment Depreciation Orders

Equipment depreciation rates for five railroads, including the Chicago, Rock Island & Pacific, have been prescribed by the Interstate Commerce Commission in a new series of sub-orders and modifications of previous sub-orders in No. 15100, Depreciation Charges of Steam Railroad Companies. The composite percentages for all equipment, which are derived from the prescribed rates, range from 2.96 per cent for the Virginia & Truckee to 5.67 per cent for the Tennessee & North Carolina.

The Rock Island's composite percentage of 3.31 is derived from the following prescribed rates: Steam locomotives, owned, 2.85 per cent, leased, 2.78 per cent; other locomotives, owned, 5.42 per cent, leased, 4.9 per cent; freight-train cars, owned, 3.4 per cent, leased, 3.05 per cent; passenger-train cars, owned, 3.07 per cent, leased, 2.55 per cent; work equipment, owned, 3.9 per cent, leased, 4.65 per cent; miscellaneous equipment, owned, 13.35 per cent, leased, 20.81 per cent. Another sub-order vacates a previous sub-order which had prescribed rates for the Chicago, Rock Island & Gulf.

Tank Car Movement Sets New Record

The railroads moved more than a half million barrels of oil daily to the east coast during the week ended March 28, according to an announcement by Petroleum Coordinator Harold L. Ickes. The exact movement was at the rate of 506,025 barrels per day and marked the fourth consecutive week that a new high has been established. The previous record of 464,561 barrels was established in the week ended March 21.

In moving 506,025 barrels each day into the east, the 18 oil companies reporting loaded a total of 15,742 cars. Including cars which were on the way back west for reloading, this means that a total of approximately 33,750 cars were engaged in the east coast service during the week, declared Mr. Ickes.

Forwarder Employees Strike for One Day

A strike of 800 freight handling and office employees of the National Carloading & Distributing Company and the Universal Carloading & Distributing Company, called on April 6, was called off on the following day when officers of the companies and the Chicago local of the Brotherhood of Railway and Steamship Clerks, Freight Handlers, and Station Employees, reached an agreement as to the procedure to be followed in considering the demands of the employees for a 10 cents per hour increase in wages. The dispute had been referred by the War Labor Board to the United States conciliation service of the Department of Labor and a hearing had been set for April 20. The strike was called because the companies had changed the date of arbitration from April 20 to May 5.

WPB Halts All Non-Defense Construction

The War Production Board order of April 9 calling a halt to all non-essential construction may have drastic effects on highway, roadway, sub-surface, and utilities construction. The order provides that no commercial, industrial, recreational, institutional, highway, roadway, sub-surface and utilities construction, whether publicly or privately financed, may be initiated with-

out permission of the War Production Board if the cost of the project amounts to $5,000 or more.

Presumably, such projects as the St. Lawrence seaway and power project could not be started without specific approval from WPB. This policy would also apply to all roads and highways unless they become the property of the Army, Navy, Coast Guard, Maritime Commission, Panama Canal, Coast and Geodetic Survey, Civil Aeronautics Authority, or the Office of Scientific Research and Development.

Freight Car Loadings

Loading of revenue freight for the week ended April 4 totaled 828,890 cars, the Association of American Railroads announced on April 9. This was an increase of 24,144 cars, or three per cent, above the previous week, an increase of 145,488 cars, or 21.3 per cent, above the corresponding week in 1941, and an increase of 226,055 cars, or 37.5 per cent, above the same week in 1940.

As reported in last week's issue, loadings of revenue freight for the week ended March 28 totaled 804,746 cars, and the summary for that week, compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For Week Ended Saturday, March 28, 1942

District	1942	1941	1939
Eastern	167,777	180,563	139,771
Allegheny	182,286	180,620	127,741
Pocahontas	56,106	56,560	46,468
Southern	125,995	122,950	101,473
Northwestern	96,627	85,880	73,225
Central Western	113,106	114,308	95,312
Southwestern	62,849	52,922	44,931
Total Western Districts	272,582	253,110	213,468
Total All Roads	804,746	793,803	628,921
Commodities			
Grain and grain products	33,714	36,954	34,540
Live stock	10,797	10,395	9,589
Coal	156,048	168,827	127,929
Coke	13,846	13,785	8,540
Forest products	45,921	40,025	31,930
Ore	30,154	16,502	10,175
Merchandise l.c.l.	143,550	161,119	147,305
Miscellaneous	370,716	346,196	258,913
March 28	804,746	793,803	628,921
March 21	796,640	769,984	620,375
March 14	799,356	759,607	619,388
March 7	770,697	742,617	620,596
February 28	781,419	756,670	634,636
Cumulative Total, 13 Weeks	10,152,485	9,386,985	8,170,530

In Canada.—Carloadings in the week ended March 28 totaled 62,369, as compared with 64,879 in the previous week and 57,516 in the corresponding week last year, according to the tabulation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Mar. 28, 1942	62,369	34,083
Mar. 21, 1942	64,879	33,684
Mar. 14, 1942	62,795	33,114
Mar. 29, 1941	57,516	31,937
Cumulative Totals for Canada:		
Mar. 28, 1942	797,295	413,852
Mar. 29, 1941	700,339	372,794
Mar. 30, 1940	604,480	314,045

Club Meetings

The Spring meeting of the Southwestern Car Service Association scheduled to be held in Dallas, Tex., on April 23, will be cancelled on account of war conditions.

The 15th annual dinner of the Metropolitan Traffic Association of New York, which was scheduled for April 23, has been cancelled. The club will, however, hold its regular meetings on April 9 and 23, each of which will be preceded by an open forum at 7 p. m. Headquarters are at the Hotel Pennsylvania.

The Car Department Association of St. Louis will hold its next meeting on April 21 at the Hotel DeSoto, St. Louis, Mo., at 8 p. m. H. C. Marmaduke, manager, Employees' Suggestion System, Illinois Central, will present a paper entitled "Enlisting Employee Interest." A morning meeting will also be held at the American Car & Foundry Company car plant at Madison, Ill., at 10 a. m., so that the second and third trick men may hear Mr. Marmaduke's talk.

March Employment 13.16 Per Cent Above Last Year

Railroad employment increased 1.85 per cent—from 1,168,795 to 1,190,416—during the one-month period from mid-February to mid-March, while the March total was 13.16 per cent above March, 1941, according to the Interstate Commerce Commission's latest compilation based on preliminary reports. The index number, based on the 1935-1939 monthly average as 100 and corrected for seasonal variation, was 120 for March as compared with February's 119.1 and March, 1941's 106.1.

March employment in all groups was above that of the previous month and of the corresponding month last year. Largest increases over March, 1941, were 16.07 per cent in the train and engine service group; 13.98 per cent in the maintenance of equipment and stores group; and 13.2 per cent in the maintenance of way and structures group. As compared with February, the largest increase was in the maintenance of way and structures group—up 4.53 per cent.

Carriers Assured by ODT on Off-Line Offices

The Office of Defense Transportation has assured the railroads, bus and truck lines, and other carriers that no plans for ordering the abandonment of off-line offices engaged in sales and service activities are now under consideration. The carriers were told that in spite of increases in war traffic, such offices could be of much value if used as service and expediting agencies.

"It has come to our attention," declared Joseph B. Eastman, director of ODT, in a statement addressed to all carriers, "that there is concern among employees of carrier outside traffic offices, and some anticipation in the general offices, that the Office of Defense Transportation will direct an abandonment of solicitation and a closing of outside offices devoted to sales and service activities. We have no present intention or plan for giving such directions.

"Decision regarding continuance of outside agencies and the scope of their activities is primarily a responsibility of carrier management, which we do not wish to influence beyond pointng out that in making these decisions preponderant weight must be given to the fact that during the war the interest of individual lines must be subordinated to the maximum utilization of all our transportation facilities for the successful prosecution of the war. Cooperation must be the watchword rather than competition.

"Carrier solicitation organization—off-line, or on-line and in the general offices—can often be of much value, even under present conditions, if used as service and expediting agencies."

P. R. R. Affiliate Loses Some Truck Routes

Modifying findings of a previous report, the Interstate Commerce Commission, Division 5, has deprived Pennsylvania Truck Lines, Inc., affiliate of the Pennsylvania, of operating rights on seven routes and portions of three others in the company's network of routes which "fairly gridiron Ohio and extend to points in adjoining states, except Kentucky." In that set-up which was involved in the title case (No. MC-43157), Pennsylvania Truck Lines is left with rights on 21 routes.

The report also embraced No. MC-19201 wherein it was found that P. T. L.'s collection and delivery operations for the Pennsylvania at Detroit, Mich., are not subject to the Motor Carrier Act. Also, that public convenience and necessity does not require the extension of P. T. L. trucking operations beyond the Detroit terminal area. In No. MC-19201 (Sub-No. 1), P. T. L. gets rights on three Ohio routes—subject to conditions designed to insure that the highway services shall remain auxiliary to P. R. R. rail services.

Eastman Urges Care in Buying Tickets

The Office of Defense Transportation has requested all federal government agencies to aid in preventing passenger traffic congestion on railroads and bus lines by instructing employees to exercise greater care in buying tickets and reserving space accommodations when traveling on official business.

Government employees should buy tickets and Pullman space well in advance of train departure, should reserve space accommodations only for trips which are reasonably definite, and should notify carriers immediately if cancellation of reservations becomes necessary, the ODT announcement said.

In making the request, Joseph B. Eastman, director of ODT, urged private firms to issue similar instructions to their employees. "By exercising reasonable care in buying tickets and reserving space accommodation," Mr. Eastman declared, "business concerns can do much to aid transportation companies in accommodating passengers and in handling the growing volume of passenger traffic."

ODT Institutes Group Warehousing Plan

A group warehousing plan designed "to permit more efficient use of storage facilities and to simplify dealings between warehousing companies and government procurement agencies" has been worked out by the Office of Defense Transportation, the War Department, and other government agencies.

The plan, according to ODT, calls for the pooling of available storage space through emergency warehouse associations formed

by public merchandise warehousemen in distribution centers throughout the country. It is already in operation in Kansas City, Mo., where a contract has been signed on behalf of the War Department and a newly-formed Federal Emergency Warehouse Association of Kansas City, made up of 11 local warehousing companies. The ODT's division of storage, of which Colonel Leo M. Nicolson is director, is aiding in the establishment of similar associations in New York, Philadelphia, Pa., Boston, Mass., Chicago, and other cities where shortages of storage space are expected.

Under the group warehousing plan, a government procurement agency, instead of negotiating separate contracts with a number of individual companies, signs a single contract with a local warehouse association for a large block of space. A single government order may be issued for storage or shipment of materials by different companies. Each company is bonded to the association, to which it bills all charges. The manager of the association in turn bills all charges to the government.

Rubber Must Not Be Wasted, Eastman Tells Truckers

Director Eastman of the Office of Defense Transportation, in an April 2 statement warned trucking companies that ODT could not recommend new trucks for operators who had permitted "careless or reckless use of their old ones, particularly as regards their tires." Applications for new trucks are cleared through ODT, which makes recommendations of approval or disapproval to the War Production Board.

"The largest stockpile of rubber today is on the wheels of operating vehicles," Mr. Eastman said. "No part of this precious supply can be wasted. Truck owners are performing a vital service to the war effort and to the essential civilian economy, but the careless use of tires may force many badly needed trucks out of service. Operators may be forced out of business. The war efforts can be impaired."

Meanwhile, John L. Rogers, director of ODT's Division of Motor Transport has followed through, asking the truckers to check and re-check constantly to prevent rubber waste caused by any of the following: Speeds in excess of 30 miles an hour in the city or 40 miles an hour on the highway; improper air pressure; overloads; cuts, snags and wear, not immediately repaired; improved alignments; recklessness in starting, stopping and taking curves; and excess mileage.

Operators of intercity bus lines have been urged by Mr. Rogers to save rubber and other critical materials by eliminating unnecessary mileage and by taking other steps to adjust bus services to war needs.

"Such action," he went on, "may be fruitful where excessive service is being operated by lines on the same or parallel routes. A system of staggered schedules and joint use of terminals might be worked out. In some cases pooling during the emergency may prove the best course." Meanwhile, Mr. Rogers warned that, under the recent ruling of the Department of Justice, any joint-action proposal must be approved by ODT and carried out at its direction. ODT "will request joint action by carriers whenever it appears advantageous;" but such requests will be made "only after conference and full discussion with the representatives of the carriers affected."

Grand Central Prepares for Raids

Air raid protection of passengers using Grand Central terminal, New York, will be enhanced by the acquisition this week of three air raid emergency trucks and thorough training of all employees of the station. The trucks, which supplement the permanent fire fighting equipment in the terminal, were specially built in the terminal shops to pass through all doors and fit all elevators in the terminal.

The equipment of the trucks which are stationed on each of the three terminal levels, includes tools for forcible entry, canvas and rubber hose, sandbags and pails of sand, a large tarpaulin, rope, four fire extinguishers, an Indian pump, a stirrup pump, two blankets, three gas masks, a collapsible stretcher, long and short splints and first aid supplies to treat twelve persons. Additional equipment available includes rope, quantities of first aid supplies and 15 stretchers.

Sandbags have also been stacked on the roof of the terminal, where a protected booth with telephone communication has been constructed for a roof watcher. The front line of the air raid emergency force in Grand Central consists of 28 policemen specially trained in handling large crowds, familiar with measures for the protection of the terminal and instructed in rendering first aid. They are assisted by 28 uniformed terminal gatemen and the 278 red caps, all of whom attend a weekly fire drill. The entire force is in charge of Police Captain W. V. O'Neill.

WPB Transportation Branch Appointments

Appointment of Sidney L. Miller as assistant chief of the War Production Board's Transportation Branch was announced this week by Andrew Stevenson, branch chief.

Mr. Miller was formerly executive head of the Bureau of Business Research at the University of Iowa, and from 1916 to 1925, he was instructor of economics and transportation at the University of Wisconsin.

Mr. Stevenson also announced the following additional appointments:

Edward S. Pardoe, chief of the Bus, Electric Railway and Other Transportation Equipment Section. Mr. Pardoe formerly was executive assistant of the Capital Transit Company, Washington, D. C.

David W. Odiorne, chief of the Rolling Stock Section. He has been connected for many years with the New York Central as special inspector and supervisor of service tests for materials and appliances on locomotives and cars.

E. Carroll Hanly, chief of the Motive Power Section. Mr. Hanly formerly was with the Pennsylvania as foreman in charge of building and repair of rolling stock and locomotives.

Mr. Berkeley Robins, chief of the Maintenance and Supply Section. He has been connected for many years with the Chesapeake & Ohio, specializing in supervising the design and maintenance of structures and layout.

George M. Cornell, technical consultant. He formerly was transportation inspector of the Chesapeake & Ohio, engaged in operating and maintenance problems.

Several of the appointees are merely continuing their association with Mr. Stevenson, having been with him when he was chief of the Transportation and Farm Equipment Branch before the recent reorganization which set up a separate Transportation Branch.

Western Lines to Give Petroleum Preferred Handling

Western railroads will give petroleum products preferred handling over all other types of civilian freight traffic, it was decided at a meeting of chief operating and traffic officers of the Western lines at Chicago, on April 1. A resolution was adopted expressing the desire and intention to continue to cooperate to the fullest extent with the Office of Defense Transportation, the petroleum co-ordinator and the petroleum industry in the solution of problems involving the movement of petroleum products and other commodities hauled in tank cars. C. E. Johnston, chairman of the Western Association of Railway Executives, was directed by the meeting to appoint a working committee composed of operating, traffic and legal representatives of various Western lines to handle such questions of policy and performance as may arise and to facilitate the greatest possible utilization of all tank cars.

At a meeting of refiners of the Mid-Continent field and the Central West, held on the same day, it was reported that if there is adequate co-operation, the eastern district can avoid punitive rationing of gasoline, although there might be rationing of heavy fuel and heating oil in that area if refiners do not operate to obtain maximum yields of fuel and minimum yields of gasoline.

It was predicted that if all refiners will co-operate, a total of 50,000 tank cars can be made available for the movement of 800,000 barrels of petroleum to the east coast daily.

Will Railroads Be Able to Handle Resort Business?

People who operate hotels and resorts must expect a revolution in passenger transportation and unavoidable inconveniences in railroad services, according to Laurence F. Whittemore, assistant to the president, Boston & Maine, in an address before a conference of hotel and resort owners of New England at Hartford, Conn., on March 29. The Boston & Maine and the Maine Central, Mr. Whittemore asserted, "hope to do somewhat better in the amount of service particularly to and from the mountain areas of New Hampshire and Vermont, and the recreational areas of Maine, than we did last year."

He warned, however, that "this statement may be too optimistic" and told the hotel men that "any prediction today may be entirely changed as quickly as tomorrow by changes in the war situation." This inability to make any sort of "long range" predictions, even from week to week, will

continue, so far as the railroads are concerned, for the duration of the war.

Mr. Whittemore declared further: "There are two or three suggestions which might help the situation. One is that your guests be notified that they will not be able to move around with ease and convenience on the railroads, but that they should probably plan to come and stay with you for a longer period than usual. Another is that, over week-ends, the railroad accommodations will be crowded—even more crowded than they were last summer—and that the wise person seeking to travel into the recreational areas should endeavor to do so in the middle of the week, when there is more apt to be vacant space in trains than over week-ends. You should advise your prospective guests to make their train reservations as far in advance as possible."

Morse Outlines War Wage Policy

(*Continued from page 758*)

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"The balancing of interests which is bound to result from such a flexible policy will make possible a quick and reasonable adjustment of wartime industrial disputes as they arise. It is in keeping with such flexible principles that I believe the War Labor Board will approach and settle the labor disputes which come within its jurisdiction. It is cognizant of the fact that the country generally, and various divisions of the government particularly, are very much concerned over the relationship between wartime demands of employees and employers and the task of regulating the cost of living and inflationary trends.

"No one can deny successfully that wages and profits bear a definite relation to cost of living and to inflationary controls, but there are other factors too, and some of them more important. The relationship between real wages and actual wages cannot be ignored by a wage board, and the difference between wage rates and average annual or monthly income becomes of vital importance in fixing wages in individual cases.

"It would seem that for the duration of the war the following basic principles should be considered minimum guarantees:

"First, all workmen shall receive wages sufficiently high to enable them to maintain a standard of living compatible with health and decency.

"Second, the real wage levels which have been previously arrived at through the channels of collective bargaining and which do not impede maximum production of war materials shall be reasonably protected. This does not mean that labor can expect to receive throughout the war upward changes in its wage structure which will enable it to keep pace with upward changes in the cost of living. On the other hand, every attempt should be made to protect the real wages of labor to the point that they do not drop below a standard of living sufficient to maintain health and decency.

"Third, to the extent that it can be done without inflationary effects, labor should be encouraged to negotiate through the processes of collective bargaining for fair and reasonable upward wage adjustments as a partial offset against increases in the cost of living. Labor should not be put in an economic straight-jacket during the war or have its wages "frozen" without redress to some such agency as the War Labor Board which has authority to grant fair and deserved wage adjustments.

"The subjecting of wage demands to some flexible formula of control would certainly entitle labor in turn to demand some flexible control of prices, profits and rents.

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Looking over the railway expense and tax figures for this year's first two months, the Bureau calls attention to the charge to operating expenses of $7,903,306 for the amortization of defense projects, no corresponding charge having been made in the like 1941 period. That the railways are making provision for "the expected more drastic corporation taxes" was shown by the fact that "in February, 1942, railway tax accruals amounted to $56,736,000 or 63.7 per cent more than in February,

(*News continued on page 768*)

READING COMPANY

FORTY-FOURTH ANNUAL REPORT FOR THE YEAR ENDED DECEMBER 31, 1941

Philadelphia, Pa., March 24, 1942.

To the Stockholders of Reading Company:

The Board of Directors submits herewith its 44th Annual Report of the operations and affairs of the Company for the year ended December 31, 1941:

	1941	1940	Increase or *Decrease*	
Average miles of road operated	1,435.37	1,448.69	*13.32*	*.9%*
Receipts from the transportation of anthracite and bituminous coal, merchandise, passengers, etc.	$79,566,095	$63,797,976	$15,768,119	25%
Cost of operating the railroad and maintaining the property	52,921,507	44,051,977	8,869,530	20%
Net Revenues	$26,644,588	$19,745,999	$6,898,589	35%
Federal, State and other taxes	9,318,064	5,540,321	3,777,743	68%
Payments to other companies in excess of receipts from such companies for hire of equipment and use of joint facilities	1,173,985	744,872	429,113	58%
Net Railway Operating Income	$16,152,539	$13,460,806	$2,691,733	20%
Income from investment in securities, property rentals and other items	1,940,922	1,995,481	*54,559*	*3%*
Miscellaneous income deductions	747,997	721,756	26,241	4%
Gross Income before deductions for fixed charges	$17,345,464	$14,734,531	$2,610,933	18%
Fixed charges — interest on funded debt, rentals paid for leased railroads, etc.	8,015,260	8,307,314	*292,054*	*4%*
Net Income available for dividends and other corporate purposes	$9,330,204	$6,427,217	$2,902,987	45%
Percentage of each dollar of operating revenue consumed by operating expenses	66.51%	69.05%	*2.54*	
Rate of return on investment in property used for transportation service	3.57%	2.99%	.58	
Times fixed charges earned	2.16	1.77	.39	
Earnings per share of First and Second Preferred Stock	$6.66	$4.59	$2.07	
Earnings per share of Common Stock after First and Second Preferred dividend requirements of $2.00 per share each	$4.66	$2.59	$2.07	

Italics denote decreases.

Financial Position, December 31st

	1941	1940	Increase or *Decrease*
The Company had investments in land, railroad tracks, terminal facilities, shops, locomotives, freight and passenger cars and other fixed property of	$366,986,597	$364,504,491	$2,482,106
In addition the Company had investments in stocks, bonds and notes carried at	72,743,697	73,964,479	*1,220,782*
Total Investments	$439,730,294	$438,468,970	$1,261,324
The Company had cash	$16,035,747	$10,868,500	$5,167,247
Railroad companies and others owed the Company	3,957,439	2,651,701	1,305,738
The Company had on hand fuel, rails, ties, bridge material and other supplies necessary for keeping road and equipment in good repair	5,933,930	4,472,885	1,461,045
Deferred assets and unadjusted debits, including items due but not yet available to the Company	1,369,659	1,397,522	*27,863*
Total Assets of the Company were	$467,027,069	$457,859,578	$9,167,491
The Company owed for materials, supplies, wages and balances to other railroad companies, and interest and rents accrued but not yet due	$10,260,309	$7,872,636	$2,387,673
Taxes accrued but not due	9,156,891	5,182,504	3,974,387
Reserve for depreciation of road and equipment	83,887,227	82,564,202	1,323,025
Deferred liabilities, including items due to others not yet adjusted	1,683,775	797,672	886,103
The total of these liabilities, credits and reserves was	$104,988,202	$96,417,814	$8,571,188
After deducting these items from the total assets there remained available capital net assets of	$362,038,867	$361,442,564	$596,303
The capitalization of the Company consisted of the following:			
Funded Debt, including bonds, equipment obligations, etc.	$124,088,077	$127,686,381	*$3,598,304*
First Preferred Stock	27,991,150	27,991,150	.....
Second Preferred Stock	41,970,600	41,970,600	.....
Common Stock	69,989,100	69,989,100	.....
Making a total capitalization of	$264,038,927	$267,637,231	*$3,598,304*
After deducting this capitalization from net assets there remained a corporate surplus of	$97,999,940	$93,805,333	$4,194,607

Italics denote decreases.

The following table affords a ready comparison of revenues derived from the operation of the property in 1941 and 1940:

Item	Revenues 1941	Increase over 1940 Amount	%
Freight:			
Anthracite Coal	$17,103,814	$2,131,071	14.2
Bituminous Coal	13,904,136	2,294,070	19.7
Merchandise	41,455,385	10,255,594	32.9
Total Freight	$72,463,335	$14,680,735	25.4
Passenger	$3,626,088	$488,099	15.5
Mail	417,937	11,904	2.9
Express	*395,243*	*17,852*	*4.3*
All Other	2,663,492	605,233	29.4
Grand Total	$79,566,095	$15,768,119	24.7

Italics denote decrease.

Operating expenses consumed 66.51 cents of each dollar of operating revenue. This was the lowest operating ratio since 1916 of the properties now operated by Reading Company, although actual expenditures for both maintenance and conducting operations were the greatest of any year since 1931. The principal operating expenditures and a comparison with the year 1940 are set forth below:

	Expended in 1941	Increase over 1940 Amount	%
Maintenance of Road	$6,538,561	$1,306,737	25.0
Maintenance of Equipment	16,130,282	3,534,193	28.1
Transportation	27,556,101	3,912,459	16.5
All Other	2,696,563	116,141	4.5
Total Railway Operating Expenses	$52,921,507	$8,869,530	20.1

The transportation ratio of 34.63% in 1941 was the lowest since 1916.

Never in the Company's history has its tax bill been as high as in 1941. Direct taxes amounted to $9,899,351. These are only the definitely ascertainable taxes paid directly by the Company, and no effect has been given to those included in the cost of materials and supplies which the Company purchased. This tax bill was equivalent to: $27,121 for each day of the year; or $561 per employee; or $3.53 upon each share of capital stock; or 12.4c out of each dollar collected from patrons; or 28.6c for each payroll dollar disbursed to 17,634 employees.

Long Term and Other Debt

Changes occurred during the year in the long term and other debt of the Company as follows:

	Funded debt	Equipment Obligations
Outstanding December 31, 1940	$121,934,968.11	$3,445,324.33
Additional obligations incurred in 1941	4,000.00	2,172,420.00
	$121,938,968.11	$5,617,744.33
Retired during year	8,498,000.00	761,424.97
Acquired for investment	1,788,000.00	.....
Outstanding December 31, 1941	$111,652,968.11	$4,856,319.36

EDWARD W. SCHEER,
President.

(Advertisement)

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Deferred liabilities, including items due to others not yet adjusted	1,683,775	797,672	886,103
The total of these liabilities, credits and reserves was	$104,988,202	$96,417,814	$8,571,188
After deducting these items from the total assets there remained available capital net assets of	$362,038,867	$361,442,564	$596,303
The capitalization of the Company consisted of the following:			
Funded Debt, including bonds, equipment obligations, etc.	$124,088,077	$127,686,381	*$3,598,304*
First Preferred Stock	27,991,150	27,991,150	.....
Second Preferred Stock	41,970,600	41,970,600	.....
Common Stock	69,989,100	69,989,100	.....
Making a total capitalization of	$264,038,927	$267,637,231	*$3,598,304*
After deducting this capitalization from net assets there remained a corporate surplus of	$97,999,940	$93,805,333	$4,194,607

Italics denote decreases.

The following table affords a ready comparison of revenues derived from the operation of the property in 1941 and 1940:

Item	Revenues 1941	Increase over 1940 Amount	%
Freight:			
Anthracite Coal	$17,103,814	$2,131,071	14.2
Bituminous Coal	13,904,136	2,294,070	19.7
Merchandise	41,455,385	10,255,594	32.9
Total Freight	$72,463,335	$14,680,735	25.4
Passenger	$3,626,088	$488,099	15.5
Mail	417,937	11,904	2.9
Express	395,243	*17,852*	*4.3*
All Other	2,663,492	605,233	29.4
Grand Total	$79,566,095	$15,768,119	24.7

Italics denote decrease.

Operating expenses consumed 66.51 cents of each dollar of operating revenue. This was the lowest operating ratio since 1916 of the properties now operated by Reading Company, although actual expenditures for both maintenance and conducting operations were the greatest of any year since 1931. The principal operating expenditures and a comparison with the year 1940 are set forth below:

	Expended in 1941	Increase over 1940 Amount	%
Maintenance of Road	$6,538,561	$1,306,737	25.0
Maintenance of Equipment	16,130,282	3,534,193	28.1
Transportation	27,556,101	3,912,459	16.5
All Other	2,696,563	116,141	4.5
Total Railway Operating Expenses	$52,921,507	$8,869,530	20.1

The transportation ratio of 34.63% in 1941 was the lowest since 1916.

Never in the Company's history has its tax bill been as high as in 1941. Direct taxes amounted to $9,899,351. These are only the definitely ascertainable taxes paid directly by the Company, and no effect has been given to those included in the cost of materials and supplies which the Company purchased. This tax bill was equivalent to: $27,121 for each day of the year; or $561 per employee; or $3.53 upon each share of capital stock; or 12.4c out of each dollar collected from patrons; or 28.6c for each payroll dollar disbursed to 17,634 employees.

Long Term and Other Debt

Changes occurred during the year in the long term and other debt of the Company as follows:

	Funded debt	Equipment Obligations
Outstanding December 31, 1940	$121,934,968.11	$3,445,324.33
Additional obligations incurred in 1941	4,000.00	2,172,420.00
	$121,938,968.11	$5,617,744.33
Retired during year	8,498,000.00	761,424.97
Acquired for investment	1,788,000.00	.....
Outstanding December 31, 1941	$111,652,968.11	$4,856,319.36

EDWARD W. SCHEER,
President.

(Advertisement)

NORFOLK AND WESTERN RAILWAY COMPANY
Summary of Forty-Sixth Annual Report for 1941

The Forty-sixth Annual Report of the Norfolk and Western Railway Company covering operations for 1941 shows that Gross Railway Operating Revenues increased $14,948,293, or 14.21 per cent, over 1940. Operating Expenses increased $6,058,658, or 10.52 per cent. Net Income decreased $4,189,973, or 13.35 per cent. Income Balance of $26,282,148 was equal to $18.68 per share of outstanding Common Stock, as compared with $21.66 in 1940.

Income Statement

	1941	Comparison with 1940	
Operating Revenues	$120,176,913.99	Inc.	$14,948,293.13
Operating Expenses	63,638,981.67	Inc.	6,058,658.17
Net Revenue from Operations	$56,537,932.32	Inc.	$8,889,634.96
Railway Tax Accruals—Federal, State and Local Taxes	32,139,362.02	Inc.	13,971,417.54
Railway Operating Income	$24,398,570.30	Dec.	$5,081,782.58
Rent Income—Equipment and Joint Facilities—Net	4,677,707.94	Inc.	903,828.74
Net Railway Operating Income	$29,076,278.24	Dec.	$4,177,953.84
Non-Operating Income	865,752.11	Dec.	22,279.05
Gross Income from all sources	$29,942,030.35	Dec.	$4,200,232.89
Interest paid on Bonds and Miscellaneous Deductions	2,748,027.05	Dec.	10,260.15
Net Income	$27,194,003.30	Dec.	$4,189,972.74
Dividends on Adjustment Preferred Stock—$4.00 per share	911,855.00	Dec.	1,525.00
Income Balance	$26,282,148.30	Dec.	$4,188,447.74

Note: Net Railway Operating Income was equivalent to 5.33 per cent. earned upon the Company's Railway Property Investment, compared with 6.29 per cent. in 1940.

Profit and Loss Statement

Credit Balance, January 1		$168,399,603.04
Add:		
Income Balance for Year		26,282,148.30
Miscellaneous Items		481,537.85
		$195,163,289.19
Deduct:		
Appropriation of Surplus for Dividends on Common Stock	$21,097,245.00	
Miscellaneous Items	339,383.71	21,436,628.71
Credit Balance, December 31		$173,726,660.48

Dividends

Dividends of $4.00 per share, or $911,855, were paid upon the Adjustment Preferred Stock. Dividends of $15.00 per share, or $21,097,245, were paid upon the Common Stock, the same as in 1940. The total of Common Stock dividends paid during 1941 represented 3.87 per cent of the Company's Railway Property Investment, and 80.27 per cent of the Income Balance.

Taxes

Railway tax accruals were $32,139,362, an increase over 1940 of $13,971,418, or 76.90 per cent. Taxes amounted to 27 cents per dollar of Operating Revenues, to 118.19 per cent of Net Income after taxes, to $1,563.27 for each employee, to $22.85 for each share of Common Stock, and to 5.90 per cent of Railway Property Investment. Federal taxes, representing two-thirds of all tax accruals for the year, increased $14,288,050, chiefly because of larger revenues and increases in tax rates. Accruals for Excess Profits tax amounted to $10,750,000.

Wage Increases

As a result of mediation by an Emergency Fact-Finding Board appointed by the President of the United States, effective December 1, 1941, all train and engine service employees received an increase of 76 cents per day and non-operating employees received an increase of 80 cents per day and vacations with pay beginning in 1942. These employees also received retroactive pay for the period from September 1 to December 1, 1941, at somewhat lower rates. Other employees—not covered by this settlement—were given comparable increases. Based upon the average employment for 1941, it is estimated that the increases, including vacations with pay, will add $6,250,000, or 16.02 per cent, to the Company's annual payroll.

Transportation Rates

Effective February 10, 1942, Class I Railroads were authorized by the Interstate Commerce Commission to increase interstate passenger fares by 10 per cent, with minor exceptions, including special fares provided for the military and naval forces of the United States traveling on furlough.

On March 2, 1942, the Commission authorized a general increase of six per cent in freight rates, with exceptions. On certain products of agriculture, live stock and products, and certain low grade products of mines, the increase authorized was three per cent. The increase authorized in bituminous coal rates was 3 cents per net ton and 4 cents per gross ton for rates of $1.00 or less, and 5 cents per net ton and 6 cents per gross ton for rates over $1.00. No increase was approved in the rates on iron ore. The new rates became effective on March 18, 1942, and will continue for the period of the war and six months thereafter.

It is estimated that the authorized increases in freight and passenger rates, as applied to 1941 traffic, would increase this Company's Gross Revenues by $3,500,000.

Financial

The capital stock held by the public was $163,330,300, a decrease of $152,500, and represented 76.05 per cent of outstanding capitalization. On December 31, 1941, the Company's stockholders numbered 13,826.

The funded debt held by the public was $51,446,532, a decrease of $291,000, and represented 23.95 per cent of capitalization so held.

Securities in the voluntary sinking fund for retirement of funded debt had a par value of $1,106,300 and a market value of $1,343,833.

Railway Property Investment

The Railway Property Investment was $545,094,423, an increase over 1940 of $16,067,260, of which $4,395,810 covered net increase in investment in various additions and improvements to roadway, structures and shop machinery and $8,401,753 covered net increase in investment in new rolling equipment.

Additions and Betterments

The more important additions and betterments consisted of construction of spur tracks into West Virginia and Kentucky to reach substantial bituminous coal deposits; laying 103.82 miles of track with 131-lb. rail, making a total of 2,759.43 miles of track laid with 130-lb. or heavier rail; replacement of existing bridges with new or rebuilt structures; installation of position light automatic signals; and elimination of grade crossings.

At Sewalls Point, Va., work was completed on a new concrete and steel warehouse for use in connection with import, export and coastal traffic. Construction of a revolving Gantry crane was nearing completion. At Roanoke, Va., substantial progress was made in the expansion of West End Yard, including classification tracks, hump yard and engine terminal facilities. At Portsmouth, Ohio, construction of additional terminal facilities to expedite traffic movement and reduce operating costs was in progress.

New Equipment

During the year the Company built, in its shops at Roanoke, Va., 4 steam passenger locomotives, 30 covered hopper cars and 82 work equipment cars, and modernized 11 heavy Mallet freight locomotives by application of cast steel beds and roller bearings, and purchased and placed in service 1,763 freight train cars, 50

[Advertisement]

passenger train cars, 20 all-steel dump cars, 4 locomotive cranes and 15 automobiles and trucks.

New Industries

Eighty-six new industries were located on the Company's lines during 1941, with a total capitalization of $65,379,197, and employment of 8,310 persons. One hundred and thirty-four established plants were expanded at a cost of $69,023,596 and employing 22,936 persons.

Service to the Nation

Since September, 1939, the Company has expended and authorized more than $60,000,000 for the construction and purchase of new cars and locomotives, expansion of yards at Norfolk and Roanoke, Va., Bluefield, W. Va., and Portsmouth, Ohio, key terminals on the system, for new and reconstructed bridges, renewals of rail, modernization of automatic block signal and communications systems and interlocking plants, and overhauling vital freight and passenger equipment. The Company has met all military and civilian transportation demands during this period, and will continue to do so if provided with adequate materials for maintenance purposes and for new equipment as needed.

W. J. JENKS, *President.*

[Advertisement]

News

(Continued from page 765)

1941." The payroll tax included in the foregoing was up 30.8 per cent, while other taxes were up 76.1 per cent.

Maine Wants Potato Lining Paper Re-Used

C. M. White, chief, Division of Markets, Maine Department of Agriculture, has appealed to Eastern railroads handling Maine potato tonnage to assist in eliminating a threatened paper shortage by urging their receivers and their own employees to leave lining papers on the sides of cars reaching terminal markets. Mr. White pointed out that trade practices in the past were to clean potato cars thoroughly of all paper linings upon unloading at receiving markets and destroy the latter. Under the new plan large quantities of lining paper could be saved and returned to be used again in the same cars.

From 1,500,000 to 2,000,000 lb. of lining paper are required annually for Maine potatoes. Reports from Northern Maine shipping points declare that lining paper is not always obtainable to protect shipments from freezing and against chafing and scuffing of paper bags, which today represent a large portion of the Maine table stock shipments. Officers of several Eastern roads have expressed their desire to co-operate with the Maine Department of Agriculture in this plan and are having terminal employees in Eastern markets see to it that paper linings are kept intact at the time of unloading, for re-use.

Railroads Bring in 66 P. C. of New York's Food Supply

Some 66 per cent of all food transported into New York City in 1940 came by railroad, according to "educated" estimates by the Metropolitan Defense Transport Committee issued last week. Thirty per cent of all foods came by truck; nearly 4 per cent by water and a fraction of 1 per cent by Railway Express Agency.

The estimates are based upon two separate sets of figures: (1) an estimated *per capita* food consumption figure derived from the U. S. Bureau of Labor statistics; and (2) independent calculation of the total sales of foodstuffs plus wholesale purchases by public and private institutions such as hospitals. These dollar sales figures, when converted to quantities at an average value per ton varied from the figures under (1) by only 3 per cent.

The committee staff state that in the New York metropolitan area there is a total resident population of 11,974,093 persons in addition to a transient population of about 60,600 per day. The total quantity of food required by this population is approximately 10,110,000 tons per annum, or 27,700 tons per day. At an average loading of 15 tons per car this would be the equivalent of 1,845 carloads—making up a train extending some 15 miles in length.

It should be noted that the percentages which each agency carried of New York's total food include such items as butter, meat and flour, all of which are almost exclusively railroad cargo. The committee estimates that the railroads bring in only about 50 per cent of the perishable foods. This tallies with a figure of 51 per cent of total fruits and vegetables reaching New York city markets hauled by rail in 1941 compiled by the A. A. R.'s eastern region competitive research office (See *Railway Age* for March 14, page 559).

John A. Appleton, general manager, Pennsylvania, at New York, is the railroad representative on the Defense Transport committee.

Equipment May Be Shifted to Roads Handling War Traffic

Present equipment may be shifted between railroads without regard to general traffic, but solely on the basis of moving war traffic, according to A. W. Vogtle, president of the National Association of Shippers Advisory Boards, at the fifty-eighth regular meeting of the Mid-West Shippers Advisory Board at Chicago, on April 7. In commenting upon the action taken by the government in taking over control of the production and delivery of new cars and new locomotives, Mr. Vogtle said, "The output itself will be curtailed because of the shortage of critical materials, particularly steel plates. Under the order, new equipment will not go to the roads best able to buy but to the roads requiring the equipment in the direct war effort. Because critical materials are urgently required for armaments, the railroads are not going to get all the new cars and new locomotives they have been promised, and frankly, why should new equipment be provided when there is any latitude at all for more efficient utilization of existing equipment? As an illustration, the actual record on carload shipments of one of the largest railroads in the southeast for January was but 56 per cent of car capacity. We simply cannot load a car to half capacity and ask for diversion of critical materials from the war effort to build a new car likewise to be loaded to half capacity, when the existing car would accommodate both loadings. The immediate armament needs are too urgent.

"We must accelerate our program and quickly adapt ourselves to these new circumstances. The transportation plant must be utilized more efficiently regardless of inconvenience and handicap, or inevitably we will experience the disaster of a transportation shortage."

Mr. Vogtle recommended that the Board insist that (1) all cars be loaded to maximum axle carrying capacity or full visible capacity; and that there be immediate revision in units of sale, in trade practices and in governmental regulations inconsistent therewith; (2) there be no detention beyond 24 hrs. in the loading and unloading of cars; (3) the railroads in turn should now gear their operations to this program; (4) seasonal movements be spread and inventories of available materials be accumulated in light traffic periods to reduce the peak tonnage usual to the fall months; (5) there be an immediate terminal by terminal study to improve switching efficiency and yard operation through careful joint planning by shippers and railroads of the day's work; (6) there be an immediate country wide study of cars in intra-plant and intra-terminal service for curtailment where practicable, and for greater efficiency where continuance is necessary; and (7) receivers of freight must remove dunnage and debris from cars to avoid delay on the cleaning track.

The need for the greatest utilization of railroad transportation was emphasized by several other speakers. J. Monroe Johnson, commissioner of the Interstate Commerce Commission, at a joint luncheon with the Traffic Club of Chicago, said "that never in the nation's history was it more dependent upon transportation than in the present war. This war means transportation more than fighting, he declared, and the proper functioning of our transportation system will assure that the battle fields of this war will be abroad and not in the United States. The railroads never before have approached their present efficiency, but they must do even better," he said.

"We in Washington feel that the railroads can do a better job through co-operative patriotism than they could do under

Continued on next left-hand page

a roll call . . .

of Lima Super-Power STEAM Locomotives for The Southern Pacific

1936 — **6** Daylights	1940 — **20** Daylights
1937 — **14** Daylights	1941 — **10** Daylights
	1942 — **10** Daylights

60

The Southern Pacific Company has just placed an order with the Lima Locomotive Works for 10 more of the famous "Daylights"... the streamlined 4-8-4 type locomotives which have made such impressive records on high-speed crack passenger runs and in equally fast over-night "Hotshot" service. Added to the 50 already in service, these 10 engines will make a total "Daylight" fleet of 60 high-speed Super-Power Steam Locomotives on the Southern Pacific.

LIMA LOCOMOTIVE WORKS

LIMA LOCOMOTIVE WORKS INCORPORATED

INCORPORATED, LIMA, OHIO

April 11, 1942

government control," he continued, "but they must enter this battle with a plan.

"If the railroads start retreating in the conflict, we will send in reinforcements in the form of service orders and whether the orders are good or bad, they will have to be obeyed. I don't want the railroads to think I am threatening them because I am not. All I want to do is to be sure that they will continue to perform as well in the future as they have in the past."

Mr. Johnson asserted that transportation is coming into its own in economics, the importance of the railroads being particularly emphasized since the outbreak of hostilities. He forecasts that a federal department of transportation would be created with a secretary of transportation as a member of the cabinet.

The release of freight cars, according to L. M. Betts, manager of the Car Service Division of the Association of American Railroads, is being definitely expedited as a result of the activities of car efficiency or vigilance committees now engaged in this work in nearly 400 communities. Comparative figures, week by week, are showing a reduction in the average detention and in the number of cars held beyond the free time allowed under the standard demurrage rules. For the last week of March, he said, 2,675 firms were holding 21,500 cars of which only 32 per cent were over free time. This compares with 35 per cent and 41 per cent of older cars for the two previous weeks, indicating a definite and continuous improvement.

The significance of these figures, he said, is not in the percentage reported, which are manifestly incomplete, but in the very definite indication that they confirm other evidence received of country-wide co-operation by all types of industry everywhere in the conservation program. Literally thousands of car days are being saved by this plan of voluntary co-operation instead of compulsion by rule and mandate. If this can be intensified as we later approach the peak period of carloadings, we believe the railroads can continue to meet the demands for transportation of war traffic and commercial needs as well.

Changes in the demurrage rules to bring about greater utilization of cars to prevent car shortages was recommended by T. C. Burwell, vice-president of the A. E. Staley Manufacturing Company. He offered a motion that loaded tank cars on tracks be not exempted from the demurrage rule, that no free time be allowed on Saturdays and Sundays, and that the 48-hr. free time be reduced to 24 hr. His motion also proposed that the demurrage rule on box cars be changed so that no free time would be allowed on Sundays and holidays, and that the free time be reduced from 48 to 24 hr. After making the motion, he moved that the matters be tabled and that if the situation does not improve a special meeting be called to act upon the changes.

The need for changes in the tank car demurrage rule was indicated in the facts that the normal 13 day turn-around time for tank cars moving from the mid-west to the eastern seaboard is now 15.8 days. The change would also induce the owners of tank cars to keep their cars in service because, under the present rule, an unloaded shippers car on the track is not subject to demurrage. Box cars, it was reported, are being held up 10 to 20 days in the east on shipments that were formerly given fourth morning delivery.

Supply Trade

The Pullman-Standard Car Manufacturing Company has been awarded a contract by the Navy Department covering the construction of 50 steel submarine chasers.

Walter F. Munford has been appointed manager of operations, Worcester, Mass., district, of the **American Steel & Wire Co.**, a subsidiary of the United States Steel Corporation.

W. H. Baselt, chief mechanical engineer of the American Steel Foundries, has been promoted to mechanical assistant to the vice-president and has been succeeded by **R. B. Cottrell,** assistant chief mechanical engineer, who in turn has been succeeded by **R. G. Aurien,** mechanical engineer of brakes.

J. A. Krugler, general sales manager of the **Taylor-Wharton Iron & Steel Co.,** has been promoted to vice-president in charge of sales and purchases, with headquarters at Easton, Pa., and **J. L. Lonergan** has been appointed superintendent of the company's plant at Easton.

Mr. Krugler, who was educated at the Rensselaer Polytechnic Institute, entered the service of the Taylor-Wharton Iron & Steel Co. in 1924, as a student salesman. Subsequently he was assigned to the company's sales offices at Scranton, Pa., and New York City. He had served as general sales manager since 1936.

Mr. Lonergan was associated with the Morris Machine Works, Baldwinsville, N.

J. A. Krugler

Y., from 1902 to 1940, serving as purchasing agent, superintendent, assistant to the vice-president, general manager, and vice-president and general manager. At the end of this period he went with the Pomona Pump Company, Pomona, Cal., as foundry superintendent. Mr. Lonergan became connected with the Taylor-Wharton Iron & Steel Co. in November, 1941.

Alexander M. Hamilton has been elected executive vice-president in executive control of the Canadian Tank Arsenal, operated by the Montreal Locomotive Works, Ltd., an affiliate of the **American Locomotive Company.** He will devote his entire time to the production of combat tanks, working in co-operation with B. D. Beamish, director general of the tank pro-

Alexander M. Hamilton

duction branch of the department of munitions and supply of the Canadian government.

Mr. Hamilton graduated from Cornell University in 1909 with a degree in mechanical engineering. He served an apprenticeship in the shops of the Erie railroad and was later employed in the engineering department of the Westinghouse Electric & Manufacturing Co. He joined the American Locomotive Company in 1910, serving in the Schenectady, N. Y., shops, estimating and engineering departments. In 1915 he went to Russia as technical representative of the American Locomotive Company and in that capacity supervised the erection of large orders of locomotives sold to that country. After serving in the United States Army during the first world war, he was stationed in Paris as European representative of the Locomotive Company for its large foreign activities. In 1921 he was transferred to New York, serving as head of the company's foreign business, including sales, finance, and foreign construction.

H. B. Higgins, who has been associated with the **Pittsburgh Plate Glass Company** since 1905, has been elected executive vice-president of the company. Mr. Higgins has been a vice-president since 1928. He heads the company's merchandising division and has been active in sales and distribution activities. After graduating from Harvard University in 1904, Mr. Higgins went to work in the company's Minneapolis, Minn., warehouse in the capacity of a stenographer. In 1912 he became manager of the Kansas City warehouse and in 1917 was named manager of plate glass sales with offices in Pittsburgh. In 1925 he was appointed general sales manager and three years later became vice-president.

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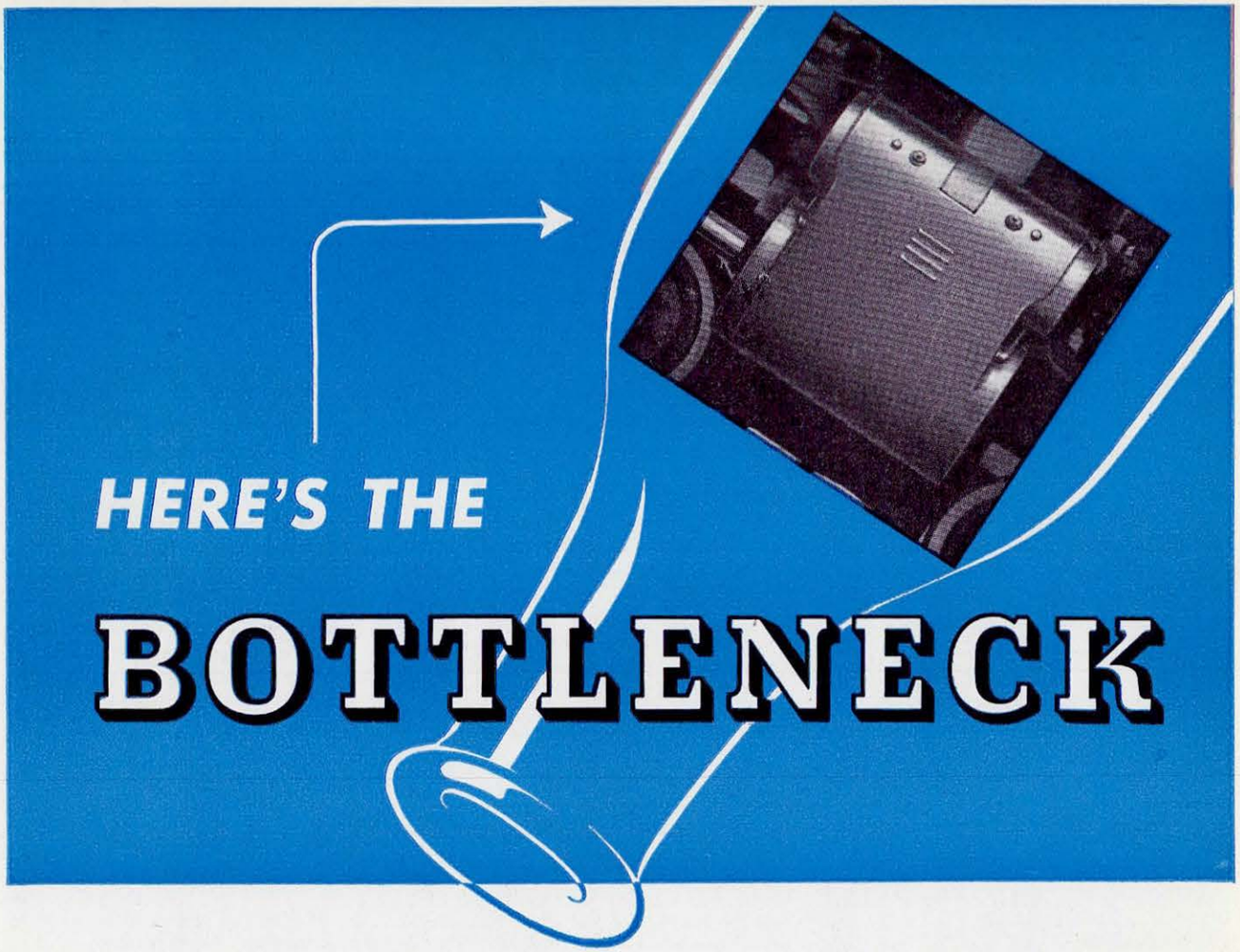

HERE'S THE BOTTLENECK

..in train load-speed capacity

THE FRANKLIN SYSTEM OF Steam Distribution

Steam handling methods, not boiler capacity have limited the load-speed capacity of the locomotive.

This has been proved repeatedly in road service and on the test plant by the Franklin System of Steam Distribution.

The Franklin System of Steam Distribution improves steam distribution and achieves a 33⅓% increase in train load-speed capacity by:

Separation of valve events, so that admission, cut-off, release and compression are independently and positively controlled.

Larger inlet and exhaust passages and improved steam flow.

Reduced cylinder clearance volume.

Increased mechanical efficiency, obtained by reduced weight of moving masses, reduced friction and elimination of carbonization.

FRANKLIN RAILWAY SUPPLY COMPANY, INC. NEW YORK CHICAGO

In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

Equipment and Supplies

North Western to Spend $46,000,000

A $46,000,000 program, devoted primarily to the maintenance of the railroad plant for the war effort, will be undertaken by the Chicago & North Western in 1942. Of this total, approximately $18,000,000 will go for roadway, track and structure, $17,600,000 for the maintenance and improvement of existing equipment and $10,275,000 for the purchase of new freight equipment. Included in the purchases are 3,375 freight cars and 20 Diesel-switching locomotives, orders for which were placed last year, as reported in the *Railway Age*. In addition, existing freight equipment not in use will be remodeled to provide additional units.

The improvement program provides for the replacing of 100 miles of light rails in main line territory with 112-lb. rails. Twenty thousand tons of rails were ordered from the Carnegie Illinois Steel Corporation and the Inland Steel Company in September, 1941. In addition, heavier rails will be installed at various points in secondary tracks as well as sidings. More than 300 miles of tracks will be ballasted during the coming year.

Special emphasis is being placed on motive power this year to increase utilization and availability. Fifty stokers are being installed in two classes of steam locomotives, power reverse gears in more than 100 locomotives and integral cast steel cylinders to replace cast iron cylinders on eleven steam power units. In addition, other major mechanical improvements to motive power are being made. New automatic electric crossing gates, wigwag signals and flashing light signals will be installed at various crossings, while automatic interlocking plants will be installed at several points, to replace mechanical interlocking plants.

FREIGHT CARS

D. M. & I. R. Buys 2,000 Cars

The Duluth, Missabe & Iron Range has placed orders for a total of 2,000 steel ore cars of 75 tons' capacity, allocating 500 cars each to the American Car & Foundry Co., the General American Transportation Corporation, the Pullman-Standard Car Manufacturing Company and the Pressed Steel Car Company. The inquiry for this equipment was reported in the *Railway Age* of March 21.

THE CANADIAN PACIFIC has placed orders for a total of 900 new freight cars as follows:

500—40-ton steel box cars—Canadian Car & Foundry Co.
200—50-ton steel box cars—National Steel Car Corporation.
150—70-ton ore cars—National Steel Car Corporation.
50—50-ton steel box cars—Eastern Car Company.

The inquiry for the above equipment was reported in the *Railway Age* of March 7.

THE SEABOARD AIR LINE is inquiring for 500 box cars of 50 tons' capacity.

THE PITTSBURG & SHAWMUT has placed an order for 100 steel twin hopper cars of 50 tons' capacity for August delivery with the Pressed Steel Car Company. This road was reported to be considering the acquisition of new cars in the *Railway Age* of February 21.

LOCOMOTIVES

THE BALTIMORE & OHIO is inquiring for 25 Diesel-electric switching locomotives of 1,000 hp. each.

THE ALABAMA, TENNESSEE & NORTHERN has ordered one 80-ton Diesel-electric switching locomotive from the General Electric Company.

THE SOUTHERN ordered two Diesel-electric passenger locomotives of 4,000 hp. each—one from the American Locomotive Company on February 28 and one from the Electro-Motive Corporation on March 7.

THE DULUTH, MISSABE & IRON RANGE has placed an order for 10 steam locomotives of 2-8-8-4 wheel arrangement with the Baldwin Locomotive Works. This railroad was first reported to be considering the purchase of new steam locomotives in the *Railway Age* of October 11, 1941, and the inquiry for the above locomotives was reported in the *Railway Age* of March 28.

IRON & STEEL

THE UNITED STATES ARMY, engineering corps, Pittsburgh, Pa., is inquiring for bids on 20,000 lin. ft. of 105-lb. rails—inv. 1101-42-496.

Appeals Board Created for Truck Rationing

Director Eastman of the Office of Defense Transportation has announced the establishment of a special appeal board in Washington, D.C., to consider appeals from decisions of the ODT's local allocation offices under the commercial vehicle rationing program. The special board has been set up pending the creation of local appeal boards in the field.

Further Curtailment in Civilian Use of Copper

"Additional drastic curtailments" of the amounts of copper assigned to civilian uses is contemplated in a program which has been adopted by the War Production Board's Requirements Committee. Railroad requirements for copper are listed among the "civilian" uses which will be curtailed.

As explained in an April 3 announcement from William L. Batt, chairman of the Requirements Committee, the program covering the current quarter of 1942 will call for "a cut of approximately 60 per cent in the civilian use of copper from that of 1940, with a large proportion of the remaining 40 per cent devoted to 'behind the lines' uses that support the military establishment." It is the first of a series of programs which will be issued by the committee "with a purpose of arriving at a unified and planned disposition of the available supply of the basic raw materials, particularly metals and chemicals."

Used Rail Prices are Further Explained

The maximum price for used rail sold for structural purposes, counterweights, fence posts and the like is governed by the price schedule for iron and steel scrap rather than the schedule for relaying rail, the Office of Price Administration announced this week. The announcement was contained in an interpretation of three sections of the schedule on relaying rail.

The second interpretation affected the maximum price for relaying rail originating from sources other than Class I railroads or Class I switching and terminal companies. Price schedule 46 directs that the maximum price on this type of rail shall be $30 per gross ton "minus the lowest railroad freight charge for transporting such rail from the shipping point to the basing point nearest freightwise to the shipping point."

The question had arisen as to whether the "lowest railroad freight charge" to be used in determining the maximum price is the freight rate for relaying rail or some other freight rate such as for scrap. OPA has ruled that the freight rate for relaying rail must apply.

Also, OPA held that the price schedule for relaying rail applies to shipments from the continental United States.

Construction

CHICAGO, NORTH SHORE & MILWAUKEE.—Approval has been granted by the Federal district court at Chicago for the construction of two new passenger stations, necessitated by increased traffic to and from the Great Lakes Naval Training Station. One of the new stations will be built on the present location of the station at the main gate and will cost about $30,000. The other station, which will cost about $29,000, will be built on the Skokie Valley route at Downey road crossing to accommodate the personnel housed in the newly constructed additions to the training station.

MISSOURI PACIFIC.—Work will soon be started on raising approximately 6.6 miles of track an average of 5 ft. near Greenwood Junction, Okla., to place it above the flood stage of the Arkansas river. At the same time portions of the line will be relocated to eliminate some curves and to reduce others. The contract for the grading on this work has been awarded Maguire and O'Brien, St. Louis, Mo. The construction of four trestle bridges and the track work will be done by railroad forces. The new roadway will be laid with 90-lb. rail and later when the embankment has become stabilized it is planned to replace the 90-lb. rail with 112-lb. rail.

Continued on next left-hand page

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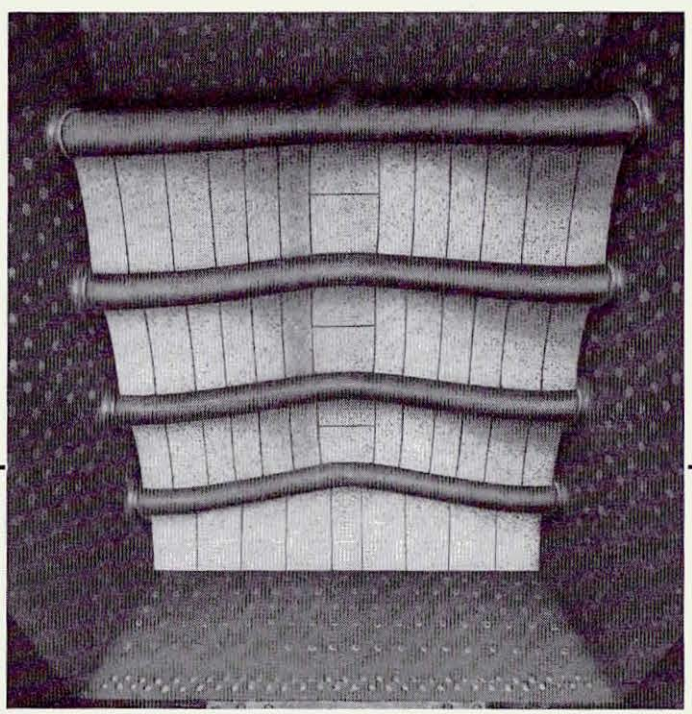

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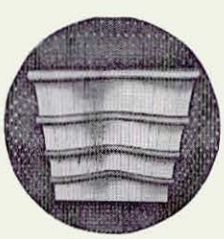
HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists



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Financial

CHESAPEAKE & OHIO.—*Note of the Covington & Cincinnati Elevated Railroad & Transfer & Bridge Company.*—The Covington & Cincinnati Elevated Railroad & Transfer & Bridge Company, a wholly-owned subsidiary of the Chesapeake & Ohio, has asked the Interstate Commerce Commission for authority to issue a 10-year promissory note without interest in the amount of $4,325,000, to be dated March 17, 1942, to evidence outstanding indebtedness to the C. & O.

CHESAPEAKE & OHIO.—*Annual Report.*—The preliminary annual report of this company for the year 1941 shows net income, after interest and other charges, of $44,939,744, an increase of $11,348,578 as compared with net income in 1940. Selected items from the income account follow:

	1941	Increase or Decrease Compared with 1940
RAILWAY OPERATING REVENUES	$150,237,334	+$17,517,163
Maintenance of way	14,221,027	+1,917,830
Maintenance of equipment	25,523,449	+813,898
Transportation	34,181,061	+3,280,990
TOTAL OPERATING EXPENSES	80,239,299	+6,151,290
Operating ratio	53.4	-2.41
NET REVENUE FROM OPERATIONS	69,998,035	+11,365,872
Railway tax accruals	19,678,804	+1,437,616
Railway operating income	50,319,231	+9,928,256
Equipment rents—Net	2,505,968	+1,053,694
Joint facility rents—Net	1,266,011	-240,509
NET RAILWAY OPERATING INCOME	51,559,187	+10,741,441
Other income	1,190,639	+43,892
TOTAL INCOME	53,024,217	+10,961,018
Rent for leased roads and equipment	49,047	-602
Interest on funded debt	7,804,829	-479,404
NET INCOME	$44,939,744	+$11,348,578

CHICAGO & WESTERN INDIANA.—*Annual Report.*—The 1941 annual report of this road shows net income, after interest and other charges, of $363,667, an increase of $3,824 as compared with net income in 1940. Selected items from the income account follow:

	1941	Increase or Decrease Compared with 1940
RAILWAY OPERATING REVENUES	$136,330	+$9,097
Maintenance of way	28,285	+6,727
Maintenance of equipment	50,307	+5,410
Transportation—Rail	115,205	+4,596
TOTAL OPERATING EXPENSES	204,984	+16,922
Operating ratio	150.4	+2.6
NET OPERATING LOSS	68,654	+7,825
Net rents	2,196,824	+8,159
Railway tax accruals	883,976	+25,637
NET RAILWAY OPERATING INCOME	1,244,195	-25,303
Other income	2,105,695	+8,756
TOTAL INCOME	3,349,889	16,547
Interest on funded debt	2,888,008	-33,506
TOTAL FIXED CHARGES	2,914,034	-31,416
NET INCOME	$363,667	+$3,824

CHICAGO GREAT NORTHERN.—*Trackage Rights.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to acquire trackage rights over the Chicago & North Western between Dodge Center, Minn., and Rochester, 19.2 miles.

CHICAGO, ROCK ISLAND & PACIFIC.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon a branch line extending from Atlanta, Iowa, to Griswold, 14.7 miles.

CINCINNATI, NEW ORLEANS & TEXAS PACIFIC.—*Annual Report.*—The 1941 annual report of this road shows net income of $4,222,757 after interest and other charges, an increase of $984,323 as compared with net income in 1940. Selected items from the income account follow:

	1941	Increase or Decrease Compared with 1940
RAILWAY OPERATING REVENUES	$22,621,591	+$4,301,209
Maintenance of way	1,838,605	-149,560
Maintenance of equipment	4,712,851	+1,123,125
Transportation	5,465,188	+803,454
TOTAL OPERATING EXPENSES	13,078,386	+1,825,891
Operating ratio	57.81	-3.61
NET REVENUE FROM OPERATIONS	9,543,206	+2,475,318
Taxes	3,755,992	+1,528,992
Railway operating income	5,787,213	+946,326
Hire of equipment—Dr.	338,601	+45,131
Joint facility rents	167,768	+31,511
NET RAILWAY OPERATING INCOME	5,958,047	+959,947
Other income	126,198	+32,002
TOTAL INCOME	6,084,245	+991,949
Rent for leased roads and equipment	1,720,994	+19,199
TOTAL DEDUCTIONS FROM GROSS INCOME	1,861,488	+7,626
NET INCOME	$4,222,757	+$984,323

ERIE.—*Bonds.*—This company has asked the Interstate Commerce Commission for authority to issue $739,231 of first consolidated mortgage four per cent bonds, series B; $443,196 of general mortgage 4½ per cent income bonds, series A; and $443,196 of preferred stock, series A (or scrip for any or all of such bonds or preferred stock), to be exchanged for the prior lien bonds of the New York & Greenwood Lake. At the present time the Erie is operating the New York & Greenwood Lake but has disaffirmed the lease under which it has operated the road for many years.

LOUISVILLE & NASHVILLE.—*Equipment Trust Certificates.*—This company has asked the Interstate Commerce Commission for authority to assume liability for $11,000,000 of equipment trust certificates, maturing in 10 equal annual installments of $1,100,000 on April 15 in each of the years from 1943 to 1952, inclusive. The proceeds will be used as a part of the purchase price of new equipment costing a total of $14,268,966 and consisting of 2,000 all-steel 50-ton hopper coal cars; 900 50-ton steel-sheathed wood-lined box cars; 100 50-ton all-steel wood-lined double-door box cars; 100 50-ton flat cars; 100 70-ton covered hopper cars; 14 2-8-4 steam freight locomotives; and eight 4,000 h.p. Diesel-electric passenger locomotives.

GULF, MOBILE & OHIO.—*Annual Report.*—The 1941 annual report of this road shows net income of $2,013,908, after interest and other charges. Selected items from the income account follow:

	1941	Increase or Decrease Compared with 1940
Average Mileage Operated	1,972.63	-0.24
RAILWAY OPERATING REVENUES	$23,647,847	+$4,946,664
Maintenance of way	3,377,492	+461,771
Maintenance of equipment	3,721,102	+628,853
Transportation	6,834,236	+771,944
TOTAL OPERATING EXPENSES	16,126,523	+1,827,734
NET REVENUE FROM OPERATIONS	7,521,323	+3,118,929
Railway tax accruals	2,495,355	+953,985
Railway operating income	5,025,968	+2,164,944
Net rents	1,364,508	+9,009
NET RAILWAY OPERATING INCOME	3,661,460	+2,155,935
Other income	131,492	+22,147
TOTAL INCOME	3,792,952	+2,178,082
TOTAL CONTINGENT CHARGES	350,858	.....
NET INCOME	$2,013,908	.....

NEW YORK, NEW HAVEN & HARTFORD.—*Reorganization.*—A proposal for the purchase by this company of the Old Colony and the Boston & Providence within the framework of the plan of reorganization approved by the Interstate Commerce Commission has been submitted to that regulatory agency. The proposal was contained in a joint report submitted to the commission by the "Compromise Committee" appointed last June by Federal District Judge Carrol C. Hincks to work out a solution of the Old Colony problem. The committee consisted of representatives of the institutional holders of the New Haven bonds, of the New Haven trustees, of the State of Massachusetts and of the holders of the Old Colony securities.

Under the provisions of the joint report, mutual claims of the New Haven and the Old Colony would be offset, and terms agreed to whereby the Old Colony bondholders would receive 20 per cent of their principal amount in fixed interest bonds and 15 per cent in income bonds of the reorganized New Haven. The New Haven and Old Colony parties have also agreed that in exchange for the transfer to the New Haven of assets and properties of the Old Colony, excepting the latter's properties in the so-called Boston group, the New Haven would transfer to bondholders of the Old Colony $3,289,600 of New Haven first and refunding mortgage, Series A

Continued on next left-hand page

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COORDINATED for *Higher* Locomotive Efficiency

BALANCED BOILERS
Ample grate and combustion areas and maximum evaporating surface within specified limits

SMALL-FLUE SUPERHEATERS
The Elesco design provides maximum superheating surface and maximum free steam area

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bonds and $2,467,200 of income Series A bonds.

The report also proposes the issuance of $2,314,000 of first and refunding Series A bonds and $1,735,585 of income Series A bonds for the Boston & Providence properties.

NEW YORK, NEW HAVEN & HARTFORD.—*Annual Report.*—The 1941 annual report of this road shows net income of $6,012,378 after interest and other charges, an increase of $8,015,552 as compared with net income in 1940. Selected items from the income account follow:

	1941	Increase or Decrease Compared with 1940
RAILWAY OPERATING REVENUES	$107,541,356	+$21,937,248
Maintenance of way	12,695,363	+2,097,783
Maintenance of equipment	16,847,540	+3,329,771
Transportation	38,853,998	+6,666,735
TOTAL OPERATING EXPENSES	74,867,757	+12,668,522
Operating ratio	69.62	-3.04
NET REVENUE FROM OPERATIONS	32,673,599	+9,268,726
Railway tax accruals	6,727,427	+119,773
Railway operating income	25,946,172	+9,148,953
Net rents—Dr.	9,021,237	+1,498,372
NET RAILWAY OPERATING INCOME	16,924,935	+7,650,581
Other income	2,953,260	+283,257
TOTAL INCOME	19,878,195	+7,933,838
Rent for leased roads	693,296	-27,850
Interest on funded debt	11,148,853	-119,365
TOTAL FIXED CHARGES	13,315,860	-5,226
NET INCOME	$6,012,378*	+$8,015,552

* For the purpose of showing the complete account for the operated System, includes accrued and unpaid real estate taxes on Old Colony and Boston and Providence properties; also accrued and unpaid charges against said properties for Boston Terminal Company taxes and bond interest.

NEW YORK, ONTARIO & WESTERN.—*R. F. C. Loan.*—This road has applied to the Interstate Commerce Commission for approval of a plan whereby it would borrow from the Reconstruction Finance Corporation $2,000,000 for the purpose of paying costs and expenses of administration and reorganization, principally taxes. The application sets forth that the applicant owes $1,630,000 in local real estate taxes and in railroad retirement taxes. The debt to the R. F. C. would be evidenced by trustee certificates issued on terms to be agreed upon with R. F. C.

PENNSYLVANIA. — *Abandonment.* — The Pennsylvania and the Monongahela, respectively, have asked the Interstate Commerce Commission for authority to abandon the Shamrock branch and the operation thereof extending from Shamrock Branch Junction, Pa., to Shamrock Works, 1.4 miles.

PENNSYLVANIA.—*Trackage Rights.*—The Pennsylvania, Ohio & Detroit, a subsidiary of the Pennsylvania, has been denied authority by Division 4 of the Interstate Commerce Commission to acquire trackage rights over the lines of the Pittsburgh, Cincinnati, Chicago & St. Louis between Trinway, Ohio, and Newcomerstown, 29 miles, and over the lines of the Cleveland & Pittsburgh between Dover, Ohio, and Hudson, 71 miles. Division 4 took the position that it could not pass upon the proposed operation at the present time since "whether the rights proposed to be acquired will ever be exercised is wholly dependent upon contingencies which may or may not arise, and if they do arise, operations under such rights will begin at a time when the physical situation of the three nonoperating subsidiaries of the Pennsylvania company may be different from what it is at present."

At the same time Division 4 authorized the Pennsylvania, Ohio & Detroit to abandon that portion of its Dresden branch, extending from Trinway, Ohio, to Blissfield, 21.3 miles. The order also permitted the Pennsylvania to abandon operation of that portion of the branch extending from Tunnel Hill, Ohio, to Blissfield, 10.4 miles.

Division 4 also deferred consideration of that portion of the application seeking authority for the Pennsylvania, Ohio & Detroit and the Pennsylvania, respectively, to abandon that portion of the Walhonding branch and the operation thereof extending from a connection with the main line of the Pittsburgh, Cincinnati, Chicago & St. Louis at Coshocton, Ohio, to Warsaw Junction, 8.9 miles.

RAILWAY EXPRESS AGENCY.—*New Director.*—Charles E. Denney, president, Northern Pacific, has been elected a director of the Agency, to succeed Frank J. Gavin.

ST. LOUIS & HANNIBAL.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon a branch line extending from Ralls Junction, Mo., to Perry, 17.8 miles.

SOUTHERN.—*Annual Report.*—The 1941 annual report of this company shows net income of $19,369,894 after interest and other charges, an increase of $2,017,822 as compared with net income in 1940. Selected items from the income account follow:

	1941	Increase or Decrease Compared with 1940
RAILWAY OPERATING REVENUES	$139,926,434	+$34,021,039
Maintenance of way	13,985,804	+904,733
Maintenance of equipment	24,432,818	+6,431,751
Transportation	43,502,952	+7,634,714
TOTAL OPERATING EXPENSES	88,547,313	+15,677,132
Operating ratio	63.28	-5.53
NET REVENUE FROM OPERATIONS	51,379,121	+18,343,907
Taxes	15,552,068	+7,160,585
Hire of equipment	2,246,227	-140,042
Joint facility rents	790,845	-9,324
NET RAILWAY OPERATING INCOME	32,789,981	+11,332,687
Other income	2,879,630	+161,459
TOTAL INCOME	35,669,611	+11,494,146
Rent for leased roads and equipment	2,679,516	-17,325
Interest on funded debt	12,209,507	-522,785
TOTAL DEDUCTIONS FROM GROSS INCOME	13,174,739	-475,920
NET INCOME	$19,369,894	+$2,017,822

SOUTHERN PACIFIC. — *Abandonment.* — This company has asked the Interstate Commerce Commission for authority to abandon its Tres Pinos branch extending from Hollister, Calif., to the end of the branch at Tres Pinos, 5.4 miles.

SOUTHERN PACIFIC.—*Abandonment by the San Diego & Arizona Eastern.*—The San Diego & Arizona Eastern has been authorized by Division 4 of the Interstate Commerce Commission to abandon a portion of its so-called Lakeside branch extending from El Cajon, Calif., to the end of the line at or near Santee, 3.2 miles.

TENNESSEE CENTRAL.—*Annual Report.*—The 1941 annual report for this company shows net income, after interest and other charges, of $160,369, as compared with a net income of $72,425 in 1940. Selected items from the income account follow:

	1941	Increase or Decrease Compared with 1940
Average Mileage Operated	285.71	.....
RAILWAY OPERATING REVENUES	$2,937,785	+$348,372
Maintenance of way and structures	512,939	+72,307
Maintenance of equipment	468,082	+70,287
Transportation	992,920	+99,711
TOTAL OPERATING EXPENSES	2,185,033	+251,103
Operating ratio	74.38	-.31
NET REVENUE FROM OPERATIONS	752,752	+97,269
Railway tax accruals	216,472	+46,232
Railway operating income	536,280	+51,037
Equipment rents (net Dr.)	128,182	-40,918
Joint facility rents (net Dr.)	5,747	+220
NET RAILWAY OPERATING INCOME	402,350	+91,735
Other income	9,725	+1,355
GROSS INCOME	412,076	+93,090
Rent for leased roads and equipment	34,693	-238
Interest on funded debt	205,073	-2,931
TOTAL DEDUCTIONS FROM GROSS INCOME	251,707	+5,146
NET INCOME (Transferred to profit and loss)	$160,369	+$87,944

UPPER MERION & PLYMOUTH.—*Deficit Settlement.*—Division 4 of the Interstate Commerce Commission has dismissed this company's claim for a deficit settlement under section 204 of the Transportation Act of 1920, as amended January 7, 1941. The order dismissing the claim asserts that the company "concedes that it cannot furnish data and/or information which would enable the commission to determine its status as a carrier engaged in general transportation, nor what amount, if any, may be due under the Act, and therefore assents to a dismissal of its claim."

Average Prices of Stocks and Bonds

	Apr. 7	Last week	Last year
Average price of 20 representative railway stocks..	25.62	24.88	29.63
Average price of 20 representative railway bonds..	67.53	66.68	64.60

Dividends Declared

Atchison, Topeka & Santa Fe.—$1.00, payable June 1 to holders of record April 30.

Pittsburgh, Bessemer & Lake Erie.—75¢, semi-annually, payable October 1 to holders of record September 15.

Railway Officers

EXECUTIVES

A. T. Mercier, president of the Southern Pacific, has been elected also chairman of the board and the executive committee of the St. Louis Southwestern.

E. T. F. Wohlenberg, general manager of the Oregon & Northwestern, has been elected vice-president and general manager, with headquarters as before at Hines, Ore.

C. R. Zarfoss, industrial agent for the Western Maryland, has been appointed assistant to president, with headquarters at Baltimore, Md., having supervision over the industrial department and such other duties as may be assigned to him.

Samuel W. Lancaster, whose election as vice-president and general counsel of the Texas & Pacific, with headquarters at Dallas, Tex., was reported in the *Railway Age* of March 21, was born at Memphis, Tenn., on November 14, 1907, and was graduated in law from Washington & Lee University in 1929. After graduation, he engaged in

Samuel W. Lancaster

the general practice of law and in 1932 entered railway service in the legal department of the Texas & Pacific as assistant commerce attorney, later being advanced to assistant general solicitor. In July, 1939, he was promoted to general attorney, which position he held until his recent promotion.

Charles E. Kane, whose promotion to executive assistant on the Illinois Central, with duties pertaining to the Illinois Central magazine and public relations and with headquarters at Chicago, was reported in the *Railway Age* of April 4, was born at Maryville, Mo., on September 21, 1893, and had several years of training as a reporter and editor on small-city dailies in Missouri. In 1915 he graduated from the School of Journalism of the University of Missouri and then remained there for two years as a teacher. In June, 1917, he went to France as a member of the University of Missouri unit of the American Field Service, spending nearly two years overseas as a private in the French and American armies and receiving the croix de guerre for services incident to the German offensive at Soissons in May, 1918. After the war Mr. Kane handled printing and publicity at the University of Missouri as university publisher, alumni secretary and

Charles E. Kane

editor of the Missouri Alumnus. He came to Chicago in 1921 as assistant editor of the Illinois Central magazine and was promoted to editor in 1925, which position he held until his recent promotion.

Peter J. Schardt, whose promotion to assistant vice-president of the Southern, in charge of mail and express traffic, with headquarters at Washington, D. C., was announced in the *Railway Age* of March 28, was born at Saukville, Wis., on October 7, 1878, and entered railway postal service as a clerk in 1900. In 1913 he was appointed chief clerk, railway mail service, at Chicago, becoming assistant superintendent in 1915 and superintendent in 1917. In 1918 Mr. Schardt was transferred to New York and from August, 1918, to November, 1919, he was United States postal agent in France, in charge of A. E. F. postal service. On his return to this country he continued as superintendent railway mail service at New York. Resigning

Peter J. Schardt

from government service, Mr. Schardt became assistant to vice-president of the Southern at Washington, D. C., in April, 1923, which position he held until his recent promotion.

Robert Sumner Shapard, vice-president and general counsel of the Texas & Pacific, with headquarters at Dallas, Tex., whose retirement was reported in the *Railway Age* of March 21, was born at Mobile, Ala., on February 10, 1874, and graduated from the University of Texas in 1896. He entered railway service on August 15, 1899, with the International-Great Northern at Palestine, Tex., as assistant attorney, later being avanced to assistant general attorney. In 1911, he went with the Texas & Pacific as assistant general attorney and during the period of Federal control of the railroads he served as general attorney of the Texas & Pacific; the Fort Worth Belt; the Weatherford, Mineral Wells & Northwestern and the Gulf, Texas & Western (now part of the Chicago, Rock Island & Pacific). On March 1, 1920, when the railroads were returned to private ownership, he continued as general attorney of the Texas & Pacific. In the latter part of 1925, he was appointed assistant general attorney, with headquarters as before at Dallas, and in the latter

Robert Sumner Shapard

part of 1933 he was advanced to general solicitor. Mr. Shapard was promoted to general counsel in 1939 and in 1941 he was elected vice-president and general counsel, which position he held until his retirement.

FINANCIAL, LEGAL AND ACCOUNTING

John E. McCullough has been appointed attorney on the St. Louis-San Francisco, with headquarters at St. Louis, Mo.

C. H. Mitchell has been appointed general claim agent for the Kansas City Southern-Louisiana & Arkansas system, with headquarters at Shreveport, La.

J. R. Reichert has been appointed secretary, treasurer and auditor of the East St. Louis Junction Railroad, with headquarters at National Stock Yards, Ill., succeeding **S. V. Davis,** deceased.

Isaac W. Haun, whose retirement as chief claim agent of the Southern system at Washington, D. C., effective May 1, was reported in the *Railway Age* of March 28, was born on October 12, 1874, in Tennessee. He entered railroad service in January, 1890, with the East Tennessee, Virginia & Georgia (now part of the Southern

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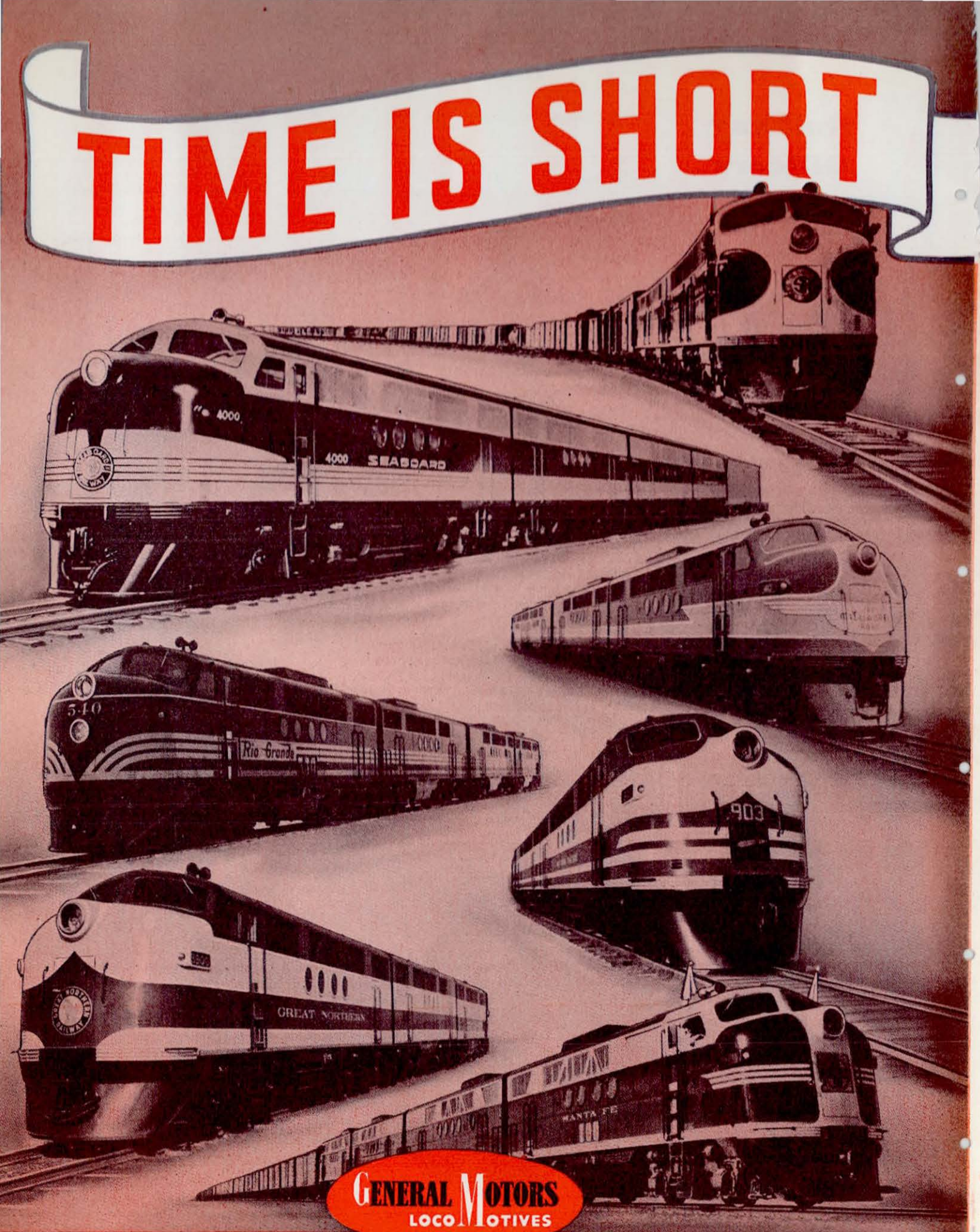
TIME IS SHORT



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IN America's Victory Program, the railroads rank in importance with the Army, Navy and Air Corps, and of all the indispensable parts of the war effort, transportation is the most far reaching. It enters every stage of production from the time raw materials leave the ground until the finished products reach their final destination. Troops, planes, ships, tanks, guns, shells, bombs, as well as that great army of workers in war production plants, would all be useless without transportation.

This is no time to waste time, and fortunate are the railroads using General Motors Diesel locomotives, for in them lie the advantages which are so vitally important at this time.

GM Diesel Freight Locomotives make possible: — reduction in train miles as much as 50 per cent — faster schedules with fewer service delays — increased tonnage hauling capacity — and for each Diesel operated release as many as five steam locomotives for other important services. And as more Diesels go into service, America's transportation network becomes that much stronger.

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IVE DIVISION

LA GRANGE, ILLINOIS, U. S. A.

system), serving until 1905 as telegraph operator, station agent and train dispatcher, respectively, at various points on the Knoxville division. Mr. Haun was appointed claim agent in 1906 and assistant chief claim agent at Washington in 1914, being promoted to chief claim agent in 1917, which position he held until his retirement.

C. H. Maurice has been appointed auditor passenger accounts of the New York Central, with headquarters at Detroit, Mich., succeeding **J. J. Russell,** who has retired after more than 53 years of service. **G. J. Paris** has been appointed assistant auditor passenger accounts at Detroit.

Henley C. Booth, general attorney for the Southern Pacific at San Francisco, Cal., has been promoted to assistant general solicitor, a newly created position, with the same headquarters. **James E. Lyons,** commerce attorney at San Francisco, and **C. O. Amonette,** have been appointed general attorneys at San Fransciso.

Herbert L. Guin, whose promotion to chief claim agent of the Southern system at Washington, D. C., effective May 1, was reported in the *Railway Age* of March 28, was born on December 31, 1887, at

Herbert L. Guin

Vernon, Ala., and received his LL.B. degree from the University of Alabama in 1916. He entered railroad service on September 1, 1913, as assistant law agent for the Alabama Great Southern (Southern system) at Birmingham, Ala., becoming law agent at Chattanooga, Tenn., in June, 1915, and claim agent there in February, 1917. After serving in the U. S. Army as second lieutenant from 1917 to 1919, he became claim agent for the Southern at Asheville, N. C., and in March, 1927, he was appointed assistant chief claim agent at Greensboro, N. C., which position he held until his recent promotion.

OPERATING

F. J. Hibbard has been appointed trainmaster on the Union Pacific at Nampa, Idaho.

R. E. Hallawell, assistant superintendent on the Southern Pacific at Sacramento, Cal., has been transferred to Los Angeles, Cal., succeeding **B. W. Mitchell,** whose promotion to superintendent of the San Joaquin division, with headquarters at Bakersfield, Cal., was reported in the *Railway Age* of April 4, and **V. M. Petterson,** assistant manager of personnel, with headquarters at San Francisco, Cal., has been appointed assistant superintendent at Sacramento, relieving Mr. Hallawell.

M. J. Byrnes, assistant to vice-president on the Northern Pacific, has been appointed chief of personnel, with headquarters as before at St. Paul, Minn.

R. F. Jeter, trainmaster of the Baltimore & Ohio Chicago Terminal, has been promoted to assistant superintendent, with headquarters as before at Chicago, a change of title.

Z. M. Morris has been appointed superintendent of transportation of the Alabama, Tennessee & Northern, a newly created position, with headquarters at Mobile, Ala.

R. H. Graham, assistant general passenger agent of the Southern, with headquarters at Charlotte, N. C., has been appointed assistant trainmaster, with headquarters at Strasburg, Va., succeeding **H. C. Mauney.**

Eric E. Wright, assistant general manager on the New York Central (Michigan Central) at Detroit, Mich., has been promoted to assistant to the vice-president, a newly created position, with headquarters at Chicago, and **Frank McElroy,** division superintendent at Jackson, Mich., has been advanced to assistant general manager at Detroit, succeeding Mr. Wright. **R. F. DeForest,** superintendent of freight transportation at Detroit, has been appointed division superintendent at Jackson, relieving Mr. McElroy, and **E. H. O'Keefe,** chief clerk to the division superintendent at Detroit, has been promoted to superintendent of freight transportation at that point, replacing Mr. DeForest. A photograph and biography of Mr. Wright were published in the *Railway Age* of February 14, following his promotion to assistant general manager.

Caleb R. Megee, assistant to the chairman of the Car Service Division of the Association of American Railroads, with headquarters at Washington, D. C., has been appointed assistant manager of the Open Top section of the Car Service Division. Mr. Megee will relieve W. J. McGarry, manager of the Open Top Car Section, who is also manager of the Ore and Coal Exchange at Cleveland, of a great amount of detailed work in connection with movement of coal cars, gondolas and flat cars, throughout the country. **A. G. Warren,** district manager for the Car Service Division at San Francisco, Cal., has been given a leave of absence to accept service as assistant director, Division of Traffic Movement, Office of Defense Transportation, with headquarters at Washington. **Henry A. Huckaba,** district manager at Dallas, Tex., has been transferred to San Francisco, succeeding Mr. Warren. **Russell D. Rifenburgh,** district manager at Cincinnati, Ohio, has been transferred to Dallas, to succeed Mr. Huckaba. **John P. Dockter,** secretary of the Ohio Valley Shippers' Regional Advisory Board, has been appointed district manager at Cincinnati, succeeding Mr. Rifenburgh.

Carl Addison Taylor, assistant general superintendent of the Western General division of the Chesapeake & Ohio, has been

Carl Addison Taylor

promoted to general superintendent of that division, with headquarters at Huntington, W. Va. **G. P. Gibbs,** superintendent of the Clifton Forge division, has been appointed assistant general superintendent of the Western General division at Huntington. **J. R. Cary, Jr.,** assistant superintendent of the Hinton division, at Hinton, W. Va., has been promoted to superintendent of the Clifton Forge division at Clifton Forge, Va.

Mr. Taylor was born on June 15, 1891, at Kenton, Del. He was graduated from the University of Delaware in electrical engineering in 1912 and entered railroad service in September, 1912, as a signal repairman with the Pennsylvania. In July, 1913, he was appointed signal apprentice and from August, 1916, to July, 1917, he was employed as signal foreman at Altoona, Pa., and assistant inspector of signals in the office of the signal engineer at

G. P. Gibbs

Philadelphia, Pa. In July, 1917, Mr. Taylor was appointed assistant supervisor of signals at Trenton, N. J., later being transferred to Philadelphia. In August, 1921, Mr. Taylor was appointed assistant supervisor of telegraph and signals, relinquishing this position in March, 1924, to become

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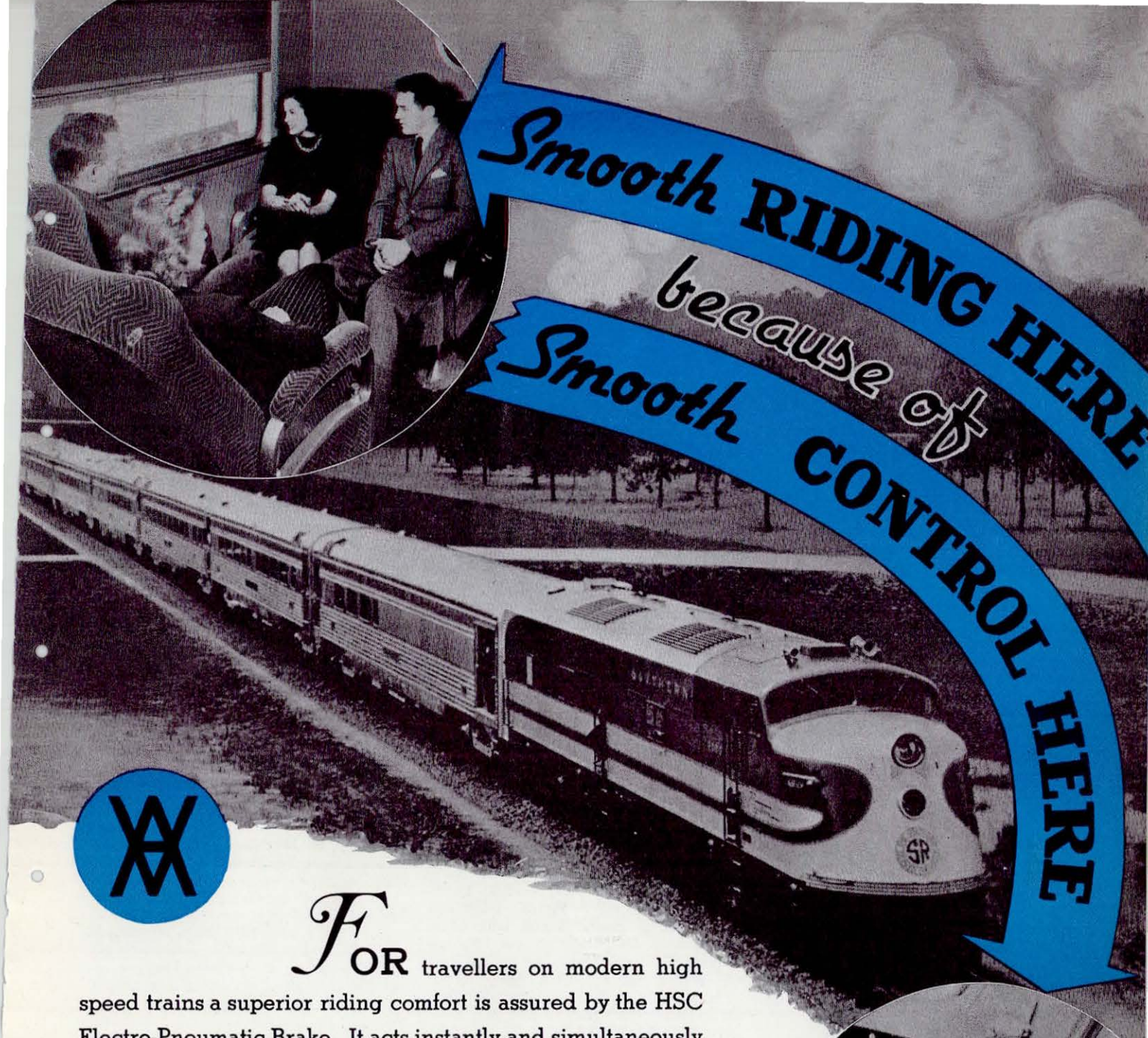

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signal office engineer for the Chesapeake & Ohio. In August, 1925, he became assistant superintendent of signals, for the same road, serving in that position until September, 1927, when he became signal engineer. In April, 1928, he was promoted to superintendent of telegraph and signals at Richmond, Va., and in April, 1940, he became assistant general superintendent at Huntington, W. Va., which position he held until his recent promotion.

Mr. Gibbs was born on October 11, 1892, at Catlettsburg, Ky., and attended high school in that city, taking a special summer course in transportation at the Harvard Graduate School of Business Administration. He entered railroad service on May 30, 1909, as telegraph operator on the Ashland and Big Sandy division of the Chesapeake & Ohio. Subsequently he served as telegraph operator and agent at various points on the Ashland division until 1912, when he became operator and clerk to the chief dispatcher at Ashland, Ky. In October, 1917, he became joint agent for the Chesapeake & Ohio, the Carolina, Clinchfield & Ohio and the Adams & Southern Express Company at Elkhorn City, Ky. He was appointed yardmaster at Shelby, Ky., on January 1, 1919, and was transferred to Paintsville, Ky., on May 1, 1920. On November 20, 1920, Mr. Gibbs was appointed trainmaster of the Big Sandy division, becoming trainmaster of the Handley Coal district of the Huntington division on December 20, 1926. On May 20, 1936, he was appointed assistant superintendent, with headquarters at Hinton, W. Va., becoming superintendent of the Clifton Forge division in June, 1940.

Charles F. Donnatin has been appointed general manager of the Southern Pacific, Pacific lines, with headquarters at San Francisco, Cal., and **W. B. Kirkland** has been promoted to general superintendent of transportation at the same point, as reported in the *Railway Age* of April 2, page 727.

Mr. Donnatin was born at Oakland, Cal., on March 22, 1879, and entered railway

Charles F. Donnatin

service in 1892 as a clerk in the Southern Pacific stores department at Los Angeles, Cal. He later served consecutively in station service as telegraph operator, timekeeper, brakeman, switchman, conductor, yardmaster, trainmaster and assistant superintendent of the Los Angeles division at Los Angeles, Cal. Mr. Donnatin was promoted to superintendent of the San Joaquin division, with headquarters at Bakersfield, Cal., in November, 1921, and three years later he was transferred to the Salt Lake division, with headquarters at Ogden, Utah. On January 1, 1931, he was transferred to the Los Angeles division, with headquar-

W. B. Kirkland

ters at Los Angeles, Cal., and on July 1, 1939, he was promoted to assistant general manager with headquarters at San Francisco, the position he held until his recent promotion.

Mr. Kirkland was born at Quitman, Miss., on April 5, 1886, and entered railway service in 1902 with the Mobile & Ohio (now part of the Gulf, Mobile & Ohio) and the New Orleans & North Eastern (now part of the Southern Pacific Lines in Texas and Louisiana), going with the Southern Pacific a year later as an operator on the Tucson division. He was advanced to train dispatcher on the same division in October, 1906, being further advanced to chief train dispatcher four years later. In October, 1912, Mr. Kirkland was promoted to chief train dispatcher of the Shasta division and four years later he was advanced to trainmaster, becoming assistant superintendent of the same division in October, 1918. From April, 1919, to March, 1920, Mr. Kirkland was on a leave of absence, during which time he served as a captain in the engineering corps of the United States Army. In the latter month he returned to the service of the Southern Pacific as a trainmaster on the Stockton division, being transferred to the Sacramento division a few months later. In November, 1924, he was appointed assistant superintendent of the Rio Grande division, with headquarters at El Paso, Tex., and in July, 1928, he was further advanced to superintendent of the New Mexico division. When the New Mexico and Rio Grande divisions were consolidated in August, 1930, Mr. Kirkland was sent to San Francisco as a special representative on the staff of the general manager and in February, 1932, he was promoted to superintendent of transportation of the Southern Pacific, Pacific Lines, with headquarters at San Francisco.

TRAFFIC

J. D. Heaby, Jr., passenger representative for the Baltimore & Ohio at Washington, D. C., has been promoted to division passenger agent at Cleveland, Ohio, succeeding **L. F. Davis,** resigned.

J. J. Gleeson, commercial agent for the Louisville & Nashville at St. Louis, Mo., has been promoted to industrial agent, with headquarters at Louisville, Ky., succeeding **W. P. DerMott,** who has entered military service.

George H. Brown, Jr., district passenger agent for the Pennsylvania at Dayton, Ohio, has been appointed division passenger agent at Cleveland, Ohio, and **W. G. Presley,** district passenger agent at Pittsburgh, Pa., has been transferred to Dayton, succeeding Mr. Brown.

L. E. Yarbrough, traffic representative for the Gulf, Colorado & Santa Fe at View, Tex., has been appointed general agent at Wichita Falls, Tex. **Harvey R. Wright,** assistant chief rate clerk in the general freight offices at Galveston, Tex., has been promoted to the newly created position of assistant to the freight traffic manager, with the same headquarters.

A. F. Haverkamp, industrial agent for the New York Central at Cincinnati, Ohio, has been appointed assistant general freight agent at St. Louis, Mo., succeeding **W. G. Evans,** who has entered military service. **G. T. Sullivan,** general agent, freight department, at Terre Haute, Ind., has been appointed industrial agent at Cincinnati, relieving Mr. Haverkamp.

James R. McClurken, whose promotion to general freight agent for the Kansas City Southern-Louisiana & Arkansas Lines, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of April 4, was born at Kansas City, Kan., on January 19, 1888, and attended St. Johns College, Shreveport, La. He entered railway service in 1902 as an office boy in the local freight office of the K. C. S. at Shreveport, later

James R. McClurken

working a short while for the Southern Pacific and the Texas & Pacific at that point. In 1906 he went with the Louisiana Railway & Navigation Company (now part of the Louisiana & Arkansas), serving in various clerical positions until July, 1917, when he went with the K. C. S. as a solicit-

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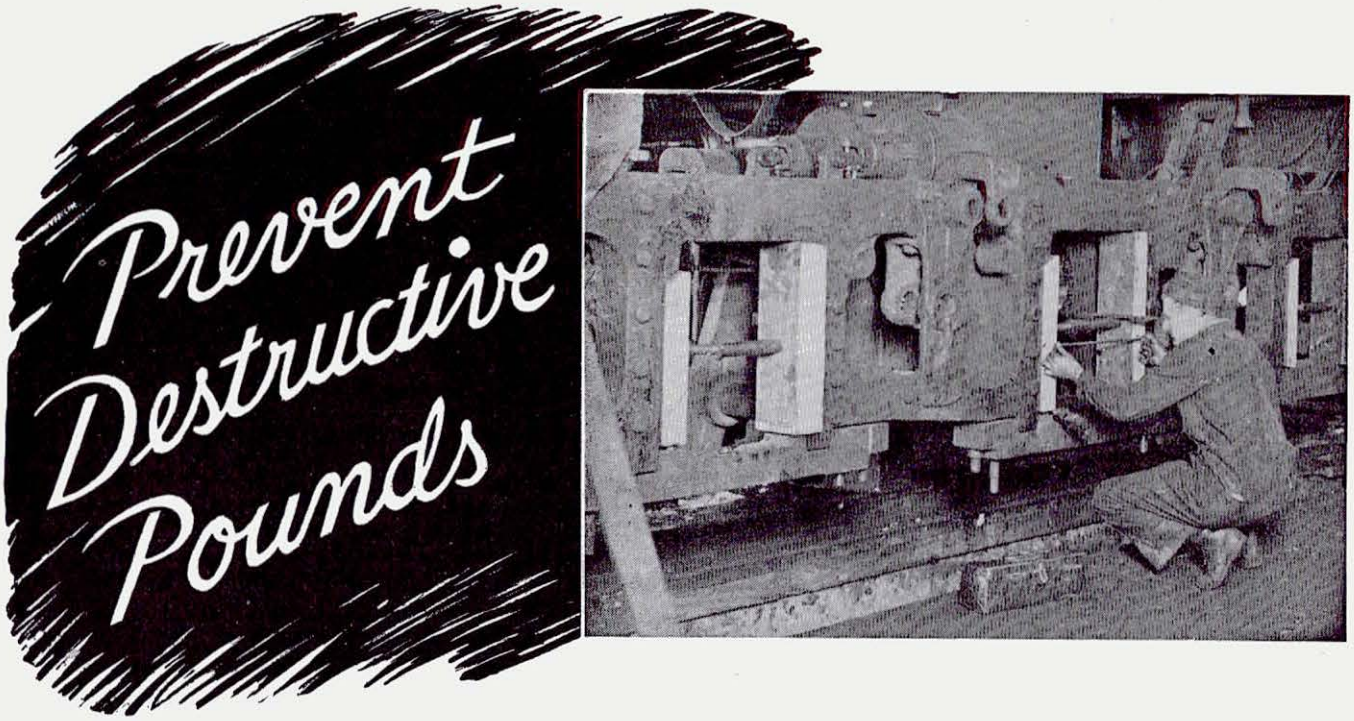

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Duplex Sectional Type Packing
for Cylinders and Valves
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LOCOMOTIVE and CAR CHARTS

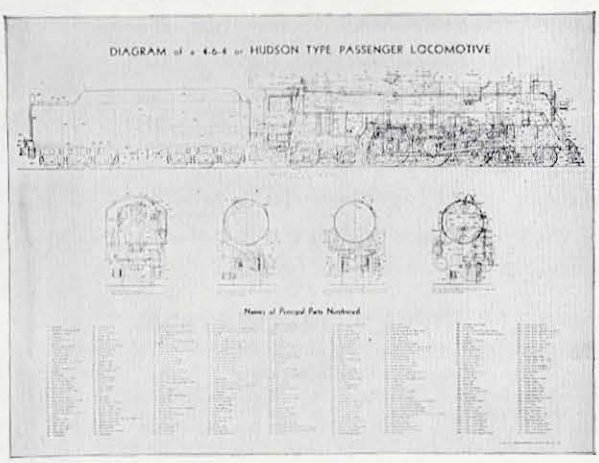

Diagram of 4-6-4 Hudson Type Passenger Locomotive
Shows 315 numbered parts and all the latest appliances. Elevation scale drawings of locomotive and tender and four cross sections.
1941. 40 x 20 inches, flat for wall chart or folded, strong paper, $.50

Chart of 2-8-2 Mikado Freight and of 4-6-2 Pacific Passenger Locomotive
Elevation and four cross section drawings with 308 numbered parts.
1920. 15 x 22 inches, $.15

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Shows seven views of the car and of various sections with 153 parts numbered and named.
1930. 28 x 24 inches, $.15

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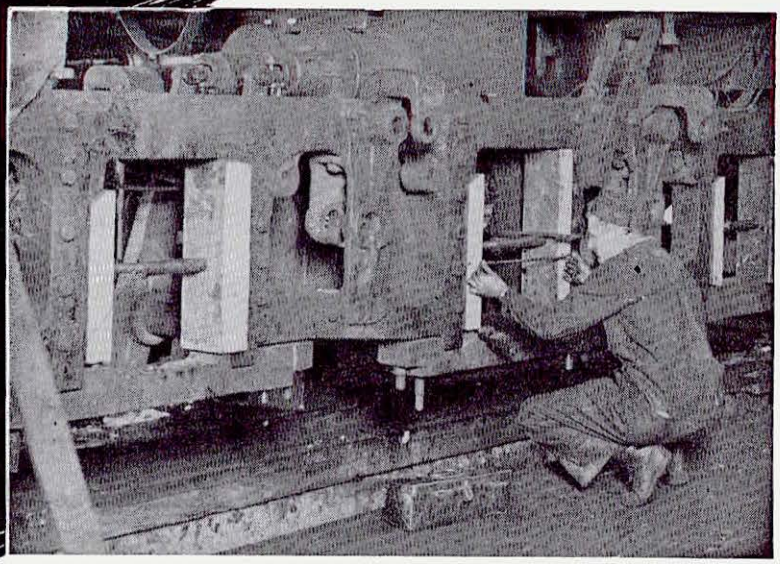

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Hub Liners
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ing freight agent. Mr. McClurken returned to the L. & A. three months later as chief clerk to the traffic manager at Texarkana, Ark, later being advanced successively to assistant general freight agent and general freight agent. In 1926 he went with the Illinois Central as assistant general freight agent at Memphis, Tenn. Mr. McClurken left railroad service in 1933 to engage in motor transportation but returned two years later as general merchandise agent for the L. & A. and general freight agent for the L. & A. Transportation Company (motor transport subsidiary) at Shreveport. In 1938 he was promoted to assistant general freight agent on the L. & A., and in 1939 he was appointed assistant general freight agent for the combined K. C. S.-L. & A. system at St. Louis, which position he held until his recent promotion, effective April 1.

L. W. Schaller, general freight agent of the Chicago, Attica & Southern, has been promoted to freight traffic manager, with headquarters as before at Attica, Ind., succeeding **A. S. Dolch,** who has been granted leave of absence to enter government service. **William F. Rosenbaum,** auditor of freight accounts, has been appointed assistant general freight agent at Attica.

D. J. Howe, district manager of the Norfolk & Western coal buureau at Chicago, has been promoted to assistant to the coal traffic manager, a newly created position, with headquarters at Roanoke, Va. **R. L. Hawkins,** assistant manager coal department, at Roanoke, has been appointed district manager, coal bureau, with the same headquarters. **L. J. Whitlock,** district manager of the coal bureau at Detroit, Mich., has been transferred to Chicago, succeeding Mr. Howe. **F. L. Donaher,** district manager of the coal bureau at Winston-Salem, N. C., has been transferred to Detroit, relieving Mr. Whitlock and **G. A. Morris,** assistant district manager of the coal bureau at Cleveland, Ohio, has been promoted to district manager of the coal bureau at Winston-Salem, replacing Mr. Donaher. **L. O. Reiter,** assistant district manager of the coal bureau at Winston-Salem, has been transferred to Cleveland, succeeding Mr. Morris. The positions of manager coal department and assistant manager coal department at Roanoke have been abolished.

MECHANICAL

W. J. Tapp, fuel supervisor of the Denver & Rio Grande Western at Denver, Colo., has been promoted to superintendent of fuel conservation, a newly created position, with the same headquarters.

H. W. Craig has been appointed supervisor of apprentices of the Erie, with headquarters at Cleveland, Ohio, succeeding **L. A. Hartley,** furloughed to accept a commission in the United States Army.

G. W. Birk, assistant superintendent of the locomotive shops on the New York Central (Big Four) at Beech Grove, Ind., has been promoted to superintendent of those locomotive shops, succeeding **F. Bauer,** who retired from active service on March 31. **K. D. Read** has been appointed assistant superintendent of the locomotive shops, replacing Mr. Birk.

SPECIAL

Samuel A. Boyer has been appointed manager of public relations for the New York, New Haven & Hartford, with offices at Boston, Mass., New York, and New Haven, Conn., as reported in the *Railway Age* of March 28. Mr. Boyer was graduated from the University of Kansas in 1923 and from the Harvard Graduate School of Business Administration in 1925. He became affiliated with the banking business at Cleveland, Ohio, and in 1930 he joined the Baldwin Locomotive Works at Philadelphia, Pa., where he first became identified with publicity and advertising. Mr. Boyer became manager of publicity and advertising of the New York, New Haven & Hartford in September, 1935. Prominently identified with the promotion of the New Haven's "snow trains," the first ever to be operated from New York, "camera-

Samuel A. Boyer

cycle," "foldboat," "husking bee" and other "hobby trains" both at New York and Boston, Mr. Boyer also has supervised the production of the railroad's four motion pictures, the latest of which—"A Great Railroad at Work"—is scheduled for release soon. The others were "This Is New England," "New England—Yesterday and Today" and "Snow Trains of 1936."

Harry B. Robertson, whose promotion to editor of the Illinois Central magazine, with headquarters at Chicago, was reported in the *Railway Age* of April 4, was born in Minnesota and served his newspaper apprenticeship as a reporter for about three years on the Minneapolis (Minn.) Journal. He then became city editor of the LaCrosse (Wis.) Tribune, which he left at the end of three years to go to Rio de Janeiro, Brazil, where he was employed as chief clerk of the engineering department and later as chief clerk of the administration department of the Rio de Janeiro Tramway, Light & Power Company, Ltd. For a little more than three years, Mr. Robertson was manager of the United Press Bureau in Brazil. He also represented the United Press for a short time in Lisbon, Portugal, but resigned to organize and publish Brazilian Business, a magazine sponsored by the American Chamber of Commerce in Brazil. Later he became the Associated Press representative in Brazil, resigning a little more than two years later to go to Europe. He spent six months in France, returning to the United States in 1924. From early in 1925

Harry B. Robertson

to late in 1927, he was on the editorial staff of the Black Diamond, a coal trade paper published in Chicago. Mr. Robertson joined the Illinois Central magazine staff on November 15, 1927, as associate editor and became managing editor on January 1, 1928, which position he held until his recent promotion. Mr. Robertson is a past president of the American Railway Magazine Editors Association.

OBITUARY

Frank C. Johnson, who retired in December, 1936, as assistant general freight agent for the Chicago, Rock Island & Pacific at Memphis, Tenn., died in that city on April 2. Mr. Johnson was one of the founders of the Memphis Traffic Club.

S. D. Warriner, chairman of the board of the Lehigh Coal & Navigation Co., died on April 3 at his home in Philadelphia, Pa., at the age of 75. Mr. Warriner was graduated from Amherst College and Lehigh University, and began his engineering career in the mining business. Soon thereafter he entered the anthracite industry and was prominent in its affairs—including its transportation subsidiaries—throughout the remainder of his life.

H. H. Field, special counsel of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Chicago, died suddenly at his home in that city on April 2. Mr. Field was born at Leverett, Mass., on May 17, 1857, and attended Wilbraham Academy, Wilbraham, Mass., being admitted to the bar at Milwaukee, Wis., in 1879. He entered railway service in 1880 as an attorney for the Milwaukee at Milwaukee and in 1886 was promoted to assistant general solicitor. In 1905 he was advanced to general counsel, with headquarters at Seattle, Wash. Mr. Field was further promoted in 1912 to general solicitor, with headquarters at Chicago, and in 1922 he was appointed general counsel. In 1931 he was appointed special counsel, which position he held until his death.

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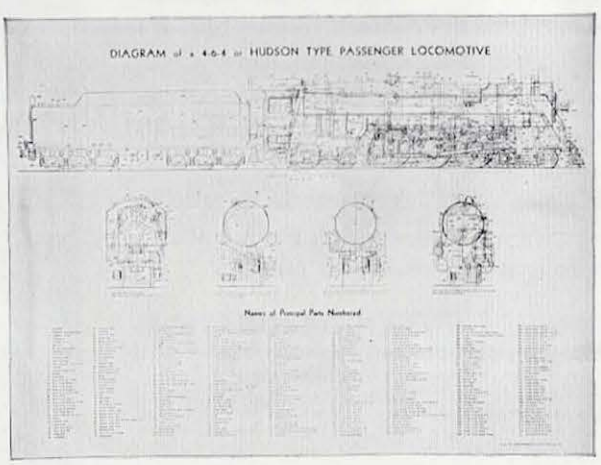
LOCOMOTIVE and CAR CHARTS



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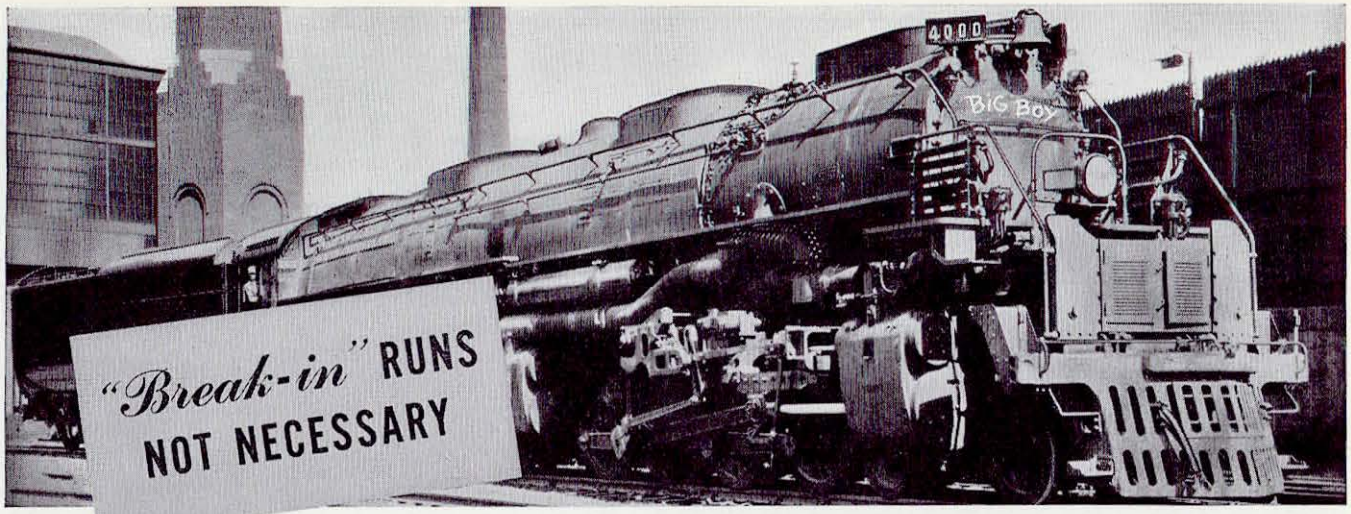

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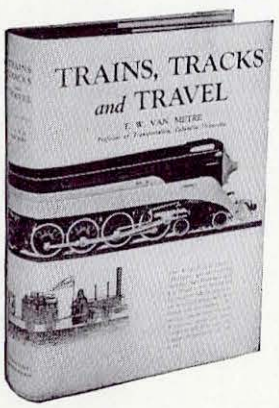

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Index to Advertisers

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A

American Arch Company, Inc. 37
American Automatic Electric Sales Company 30
American Car and Foundry Company 8, 9
American Locomotive Company .....23 to 28 incl.
American Steel Foundries 11
Association of Manufacturers of Chilled Car Wheels..... 2

B

Baldwin Locomotive Works, The 15, 16, 17, 18
Bethlehem Steel Company 3

C

Classified Advertisements 42

D

Dearborn Chemical Company 43

E

Electric Storage Battery Company, The 4
Electro-Chemical Engineering Corp. 43
Electro-Motive Division, General Motors Corporation.....38a, 38b

F

Franklin Railway Supply Co., Inc. 36

G

General Electric Co. .....23 to 28 incl.
General Railway Signal Co. .....Back Cover
Get Together Department 42
Gold Car Heating & Lighting Co. 42

H

Harbison-Walker Refractories Co. 37
Hennessy Lubricator Co. 12
Holland Company 5
Hunt Company, Robert W. 42
Hunt-Spiller Mfg. Corporation 40

I

Industrial Brownhoist Corporation 6
Iron & Steel Products, Inc. 42

K

Kerite Insulated Wire & Cable Co., Inc., The 43

L

Lima Locomotive Works, Inc. 35

N

National Malleable and Steel Castings Co. 14

O

Ohio Locomotive Crane Co., The 42
Oxweld Railroad Service Company, The 7

P

Peerless Equipment Co. 29b
Pittsburgh Plate Glass Company 19
Pittsburgh Spring & Steel Co. 42

R

Railway Educational Bureau, The 42
Republic Steel Corporation 41

S

Schaefer Equipment Company 29
Simmons-Boardman Publishing Corp.....20, 21, 29a, 42, 43
SKF Industries, Inc. 10
Sonken-Galamba Corp. 42
Standard Railway Equipment Mfg. Co. 34
Standard Steel Works Div. 18
Standard Stoker Company, Inc., The 13
Superheater Co., The 38
Symington-Gould Corporation, The 49

T

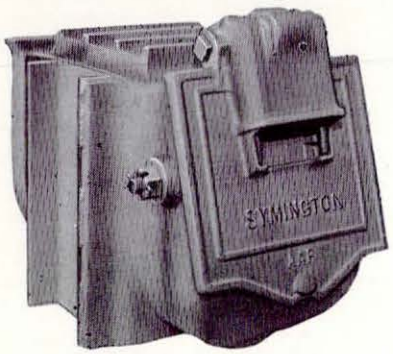
Teletype Corporation 22

U

Union Carbide and Carbon Corporation 7
Union Switch & Signal Co. 32

W

Western Electric Company 22
Westinghouse Air Brake Co. 39
Wine Railway Appliance Co. .....Front Cover



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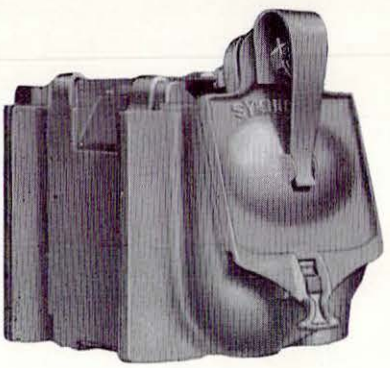

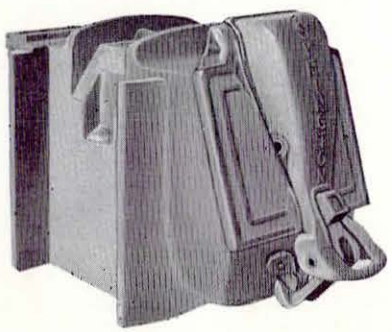

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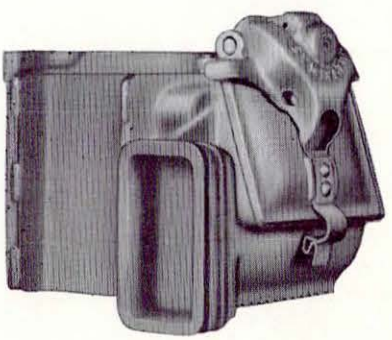

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